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FIFTY-FIFTH ANNUAL REPORT

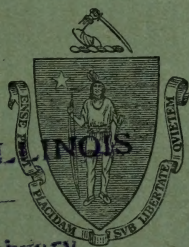
OF THE

## MASSACHUSETTS AGRICULTURAL COLLEGE.

PART I.

REPORT OF THE PRESIDENT AND OTHER OFFICERS  
OF ADMINISTRATION

FOR FISCAL YEAR ENDED NOV. 30, 1917.



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# FIFTY-FIFTH ANNUAL REPORT

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MASSACHUSETTS  
AGRICULTURAL COLLEGE.

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# The Commonwealth of Massachusetts.

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MASSACHUSETTS AGRICULTURAL COLLEGE,  
AMHERST, Dec. 1, 1917.

To His Excellency SAMUEL W. McCALL.

SIR:— On behalf of the trustees of the Massachusetts Agricultural College I have the honor to transmit herewith, to Your Excellency and the Honorable Council, Part I. of the fifty-fifth annual report of the trustees, for the fiscal year ended Nov. 30, 1917, this being the report of the president of the college and other officers of administration to the corporation.

I am, very respectfully, your obedient servant,

KENYON L. BUTTERFIELD,

*President.*





## REPORT OF THE PRESIDENT OF THE COLLEGE.

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*Gentlemen of the Corporation.*

I herewith submit my annual report as president of the Massachusetts Agricultural College, and with it transmit reports from the other administrative officers of the institution.

The past year has been a notable one for the college for at least two reasons. It has witnessed the completion of fifty years of service by the institution, and it has seen the second half century of its history ushered in by an eager response to the call to the colors, as our country entered the war. Indeed, the war soon became the chief concern of all persons connected with the college. The fact that the college has always had a military establishment led, of course, to a keen personal interest in the war on the part of students and younger alumni who might be eligible to military service. The prompt announcement in Washington that agriculture and the development of an adequate food supply was a prime concern in the war added another reason for intense interest. There is therefore but one subject this year suitable for the customary discussion in which it has become a habit to indulge in my annual report, and that is

### **THE MASSACHUSETTS AGRICULTURAL COLLEGE AND THE WAR.**

On Feb. 9, 1917, the Governor appointed 100 men as a Committee on Public Safety. In the personnel of the committee and in its original subcommittees no place was made for agriculture; evidently the military aspect of the war problem was uppermost in the minds of those responsible for the plan. I immediately corresponded with Mr. James J. Storrow, the chairman of the committee, with reference to the importance of recognizing food supply as a war emergency, with the result that he requested the Massachusetts Federation for Rural Progress to name a committee on food production and conservation.

This action was taken on March 2, and the committee was at once made a subcommittee of the Committee on Public Safety, and on March 5 had organized with Mr. John D. Willard, who had been "loaned" by the Franklin County Farm Bureau, as executive secretary. The personnel of the committee was as follows: —

Kenyon L. Butterfield, <i>Chairman.</i>	Carlton D. Richardson.
Philip R. Allen.	Henry Sterling.
Reginald W. Bird.	Marcus L. Urann.
Nathaniel I. Bowditch.	Wilfrid Wheeler.
Joshua L. Brooks.	John D. Willard, <i>Secretary.</i>

The program of food production adopted by the committee outlined three sources of increased production, — the first and chief, on farms, largely with the staple crops; the second, in boys' and girls' gardens; and the third, through family gardens carried on by residents of cities and villages. Later an auxiliary committee on food conservation was organized, with Dean Arnold of Simmons College as chairman.

### **The First Steps.**

The program that was adopted by this committee and the methods of work put into operation were largely those that had been formulated by Director Hurd, assisted by members of the staff with whom he had counseled individually and in conference.

The college at once placed itself practically at the disposal of the Commonwealth as represented in the Committee on Public Safety, stating that it wished to render every possible service in the emergency. Steps were immediately taken to mobilize the institution fully, as will appear as the report proceeds. Our attitude towards both State and national government is shown by the following vote of the faculty: —

*Whereas*, The land grant colleges of America, owing their origin to the stern realization of the absolute need and utter unpreparedness of the nation during the darkest period of the great strife, were established in order that the nation might ever be ready to meet victoriously any and every foe that might oppose her at any time during the long future; and



*Whereas*, To these colleges during all the years since the Morrill Land Grant Act the people of the United States and of the Commonwealth have given generously of their substance and wealth, and ever manifested unfailing loyalty and love to them; and

*Whereas*, The Massachusetts Agricultural College, as one of the members of this noble sisterhood of colleges, has been bountifully nurtured and blessed by the rare munificence of the government; be it therefore

*Resolved*, That we, the faculty of the Massachusetts Agricultural College, fully recognizing our peculiar obligations to our beloved country in this hour of her new danger and peril, do pledge anew to her and to her cause our outmost loyalty and devotion, and place at her service without reservation all the strength, influence and resources which God hath vouchsafed to us; and be it further

*Resolved*, That a copy of this resolution be forwarded to the President of the United States, and to the Governor of this Commonwealth, and that it be placed before the people as the true attitude of the faculty of the Massachusetts Agricultural College.

### **Campus Mobilization.**

A committee on campus mobilization was organized March 5, with the following personnel: Professor Hurd, Dr. Brooks, Professor Sears and Professor Lockwood. This committee immediately started a census of students and alumni with reference to their fitness for, and willingness to perform, either military or agricultural service. The committee also canvassed the entire faculty, and made assignments to different lines of work in accordance with a definite schedule. The committee also acted as a clearing house for students and faculty in agricultural work, approving projects, starting work and assigning members of the staff to special pieces of work as occasion demanded.

The members of the extension staff, of course, carried on their regular work, but in a highly augmented fashion. Their service was performed very largely in co-operation with the county farm bureaus, which soon became the actual centers of operation through the State. Many of the teaching staff, as soon as they were relieved from their regular duties, took up assigned special war service in the field or on the campus. The research work of the experiment station naturally went on about as usual, inasmuch as all this work is concerned with problems of food production.

### **The Students in War Time.**

Acting in accordance with expressions coming from President Wilson, Secretary of War Baker and others, as well as in accordance with our own convictions, every endeavor was made, after war was declared, to keep the teaching work going in normal fashion. It soon developed, however, that not only were the students very uneasy and inclined to neglect class work, but the demand for farm labor in the State was such that their help was greatly needed. As a consequence, the faculty passed a vote on April 20 providing that students who wished to leave before the end of the year to work on farms would receive credit for their work in college if they performed satisfactory farm labor for twelve weeks. Under this plan the large majority of the students left within two weeks, and by the 1st of May the college was practically closed.

Nearly all of the students going into agriculture found their own positions, although the committee on mobilization assisted in many cases. Nearly 400 men found employment in farming, gardening or in supervision of such enterprises as boys' and girls' clubs, community garden plots, etc. About 50 of the men went into military service, so that all told nearly 500 students, or about 95 per cent., were performing war emergency service by the 1st of June, 85 per cent. being in agricultural service and 10 per cent. in military service. This is a remarkable record. Every effort was made to keep in touch with the students in the field. Many of them were visited personally during the summer by members of the staff. Reports came in from the students as well as from their employers. Dean Lewis devoted a large part of the summer to studying these reports, corresponding with both students and employers. Many men who had never before had farm experience soon adapted themselves to the work, and the testimony of employers was uniformly most complimentary to the men.

The year opened with a greatly reduced attendance. Out of 138 men registered in the class of 1918 last fall only 64 returned to college this autumn. In the class of 1919 the attendance is 113 this fall as against 174 registered in the fall

of 1916; 117 men out of 170 in the class of 1920 returned this autumn. This year there are 118 freshmen as compared with a registration of 170 last year.

### Students now in Military Service.

The number of students in military service December 1 is indicated in the following table: —

CLASS.	Com-missioned Officers.	Others.	Total.	Per Cent. of Class.	Overseas.
Sophomores, . . . . .	-	16	16	10	6
Juniors, . . . . .	3	28	31	15	4
Seniors, . . . . .	21	45	66	40	11
	24	89	113	-	21

### Graduate Students.

In 1916 the enrollment of graduate students was 57. The maximum registration in the fall of 1917 was 29, approximately one-third of whom have since left. This decrease of 60 per cent. in the enrollment of graduate students is undoubtedly due to the war.

### The Alumni.

The alumni have responded to the call to military service in the same spirit as have the students. The following table of records will indicate our latest information on this point: —

CLASS.	Com-missioned Officers.	Others.	Total.	Overseas.
1917, . . . . .	20	58	78	8
1916, . . . . .	7	29	36	1
1915, . . . . .	4	16	20	4
1914, . . . . .	6	18	24	2
1913, . . . . .	8	11	19	3
1912, . . . . .	11	7	18	1



There are twenty-five men in military service from the class of 1881 up through the class of 1911.

The total number of staff, students, alumni, and former students in military service at the present time is 355.

Scores of alumni in different parts of the country are rendering public service in connection with voluntary agencies or with agencies already established. Perhaps the two most notable examples of the public service which M. A. C. men are rendering in this connection are those of Mr. Daniel Willard, president of the Baltimore & Ohio Railroad, who is a member of the National Council of Defense, and that of Dr. Joel E. Goldthwaite, who headed a commission of medical experts to France to study problems of disease and physical incapacity.

#### **The College Staff and Military Service.**

Soon after the draft went into effect the question arose as to what the policy of the college should be concerning occupational exemption for members of the staff. It seemed unfair to the country to press for exemption of members of the staff as a class; it seemed unfair to the college to make no claims for exemption. Therefore in those cases where it was clear that the man's services were necessary in order to maintain college work the district board was asked to make exemption. But few of these cases arose. Therefore the college staff has been, of course, somewhat depleted, several of the younger men being drafted or volunteering for enlistment. Following is a list of those who have gone into military service:—

Windom A. Allen, Assistant Chemist, Experiment Station, in the draft camp at Ayer.

Wesley H. Bronson, Assistant Extension Professor of Farm Demonstration, United States Naval Reserves.

L. L. Derby, Assistant in Physical Education, Medical Corps.

Harold M. Gore, Assistant Professor of Physical Education, First Lieutenant, United States Reserves.

Burt A. Hazeltine, Instructor in Mathematics, teaching in radio school at Newport, R. I.

Roswell W. Henninger, Extension Instructor in Charge of Poultry Club Work, aviation school, San Antonio, Tex.

John B. Lentz, Assistant in Veterinary Science, Experiment Station, Captain, Medical Corps.

Bernard W. Shaper, Assistant to the Director of the Extension Service, Reserve Officers' Training Camp, Fort Leavenworth, Kans.

Robert S. Scull, Assistant Chemist, Experiment Station, chemical work, Washington, D. C.

F. A. Cushing Smith, Extension Assistant Professor of Landscape Gardening, aviation school, San Antonio, Tex.

John B. Smith, Assistant Chemist, Experiment Station, drafted, Camp Devens, Ayer, Mass.

### **Is Agriculture a War Service?**

It has become almost a truism that agriculture should be regarded as a war service; but thus far it has not been possible to arrange for the definite assignment of men, either members of the staff or college students, to this form of war work. For example, the county agents indicated last summer that they would want at least forty students as agricultural supervisors the coming spring. It will be very difficult, indeed, to supply these men unless the new classification will simplify matters by listing men for specified war work other than strictly military service.

### **Helping Students to understand the War.**

Ever since the severing of relations with Germany efforts have been made at chapel, through assembly speakers and in other ways, to present to the students the real meaning of the war. It has been necessary to handle this matter with considerable caution for fear of overstimulating the men in their attitude toward enlistment. One of the most interesting single aspects of the interest of the students was shown by the remarkable response to the appeal for funds, made here as in all the other colleges of the United States, to assist the Young Men's Christian Association in its war work in the military camps in this country and in Europe. We have no way of knowing what the normal allotment for this college would have been, but we suppose perhaps \$1,500 to \$2,000. The students themselves, through appropriate committees, decided to try to raise \$5,000. As a matter of fact, the pledges amounted to over \$6,000 from students and faculty, the students alone pledging nearly \$4,500. Ninety per cent. of the students pledged something, and their average per capita was approximately \$10. The response from members of the staff was exceedingly good.

### **A Shortened Year.**

The faculty voted to shorten the collegiate year 1917-18 in order that students might remain in farm work as late as possible in the fall, and might be available for farm work early in the spring of 1918. Each of the three terms was shortened from twelve to nine weeks. Commencement will come April 27-29. Every effort is being made to keep up the grade of work.

### **Athletics.**

Probably no department of the college has been obliged on account of the war to depart more widely from its customary program than has the department of physical education. Handicapped by reductions in the staff as well as by the lack of men and the shortened college year, a method was nevertheless devised for keeping up interest in athletic work which has met with a success extremely gratifying both to the department and to the students. Details of this plan will be found upon a succeeding page.

### **Late Opening.**

In order to permit men in agricultural service to complete the season's work, the opening of college was postponed from the middle of September until October 10. Although students in order to receive credit for the full work of the previous semester were obliged to work only twelve weeks on farms, I think a large proportion of them continued work throughout the summer. Some even were not able to return October 10, because of the necessity of completing agricultural enterprises in which they were engaged.

### **Special Service of Individuals.**

It is difficult to praise too highly the spirit of the staff in their relations to war work activities. I think it is fair to say that the entire institution has been almost completely mobilized for war service. In some cases, of course, the regular work constituted the service. For example, the members of the experiment station staff have kept at work on their regular projects, all of which have to do more or less directly with



food production. The members of the extension staff threw themselves into the field work with increased vigor, if that were possible, sparing nothing of time and energy to meet the situation. So long as college classes were maintained, the majority of the teaching staff gave their time to their regular work, but as soon as the college closed in the spring, nearly every teacher took up some special form of war work to which he had been assigned. Quite accurate reports in detail are now available relative to the service thus rendered. It is not necessary to go into details in this report, but I may say that over 50 members of the teaching staff gave more or less time to this service, the amount of time ranging from a number of days to two or three, and in some cases four, months of solid time. The technical men, of course, as in agriculture and horticulture, worked in the line of their specialties, quite largely in the field. The science men either did work in connection with protection of crops and animals, the preservation of food, special investigations in connection with munitions, or occasionally in the work of surveys. The men in the Division of the Humanities engaged in a wide variety of work, some assisting in survey tabulation, others in supervision of garden work. I might specify some instances of types of service: assisting the field staff of the Hampshire County Farm Bureau; service in an information tent on Boston Common; helping in the developing of dairy records and in the poultry drive; community canning and preserving; garden supervision; emergency publicity and publications. A large number of the staff assisted in the surveys of farm labor, food production, consumption and distribution.

Professors Neal, Wheeler, Kilham and Hicks were practically "loaned" to the State Food Production Committee for the season. The last-named spent nearly four months organizing a very complete system of farm labor exchange in the State. His plan was so satisfactory that the United States Department of Agriculture practically took it as a model for their work in other parts of the country.

The emergency also increased very materially the correspondence in all departments of the institution; this was handled satisfactorily without addition to the clerical staff.

It helped, however, to make the year an unusually busy one. The war work, of course, has taken a good deal of the president's time since the 1st of March, as chairman of the State Committee on Food Production, and later as a member of the Massachusetts Board of Food Administration, as well as in various other capacities.

A number of our staff have been "loaned" for practically full time. The United States Department of Agriculture asked for Professor Hurd's services. About the 1st of August Professor Hurd went to Washington and has been there ever since, giving up his plans for his sabbatical year, occupying a very important position as assistant in the office of the Secretary of Agriculture. Professor Machmer has been released from his duties as assistant professor of mathematics in order to take an important position in field work in distribution in the western district of Massachusetts. Prof. W. D. Clark has been "loaned" to the Massachusetts Fuel Administration to assist in carrying on the campaign for the use of wood for fuel. Miss Sayles of the Extension Service has been released for the year for service with the home economics branch of the extension work of the United States Department of Agriculture.

### **Food Supply Studies.**

The college, through its department of agricultural economics, and with the assistance of some eight or ten members of the general teaching staff of the institution, made elaborate surveys of food conditions in three or four counties.

A census of production in the five western counties, including nothing but *farm-grown* products, was conducted by the department of agricultural economics. The data collected covered acreages of farms, woodlots and improved land; number of live stock on hand in 1916 and 1917; acreage and quantity of various farm crops and vegetables produced in 1916 and proposed for 1917. A few facts stand out with special prominence, as revealed by the census, among which are the small number of farms and the small quantities grown on each farm. Although the census was taken in the four western counties before the crops of 1917 were sown, the reports indicate a probable increase in the acreage of several farm products.

The census in Worcester County was taken after the crops were planted, and it is significant that this county shows the greatest increase in acreages. The four western counties show an increase of 46 per cent. in acreage of corn for grain, 46.9 per cent. for potatoes, 150 per cent. for beans and 42.4 per cent. for green vegetables. Worcester County shows the greatest increases, — 110.5 per cent. in corn for grain, 46.5 per cent. for potatoes, 300.6 per cent. for beans and 84.4 per cent. for green vegetables.

A census of food consumption was also conducted by the department of agricultural economics. The territory covered included Hampshire County and a part of Hampden County. The data, secured from wholesale and retail dealers, transportation companies, storages and large consumers, such as hotels, restaurants and boarding houses, took account of certain staple foods, and the figures asked for showed quantities shipped in, reshipped, stored, sold and bought from local producers. The returns have been tabulated by towns, and reveal a notable lack of trade in home-grown products; but 22.4 per cent. of potatoes consumed are home grown, 7.8 per cent. of the beans, 33.2 per cent. of the eggs, 12.1 per cent. of the butter, 57.6 per cent. of the apples and 62.9 per cent. of the milk. Hampshire County produces 27.7 per cent. and Hampden County 18.8 per cent. of the grain needed by the live stock reported in these counties by the census of 1910. The three western counties, however, produce 6.4 per cent. more hay than necessary to feed the stock owned in the counties at that time.

In April, 1917, the milk situation in New England threatened to be very serious. Little usable information relative to cost of production was available. The committee on agriculture of the Boston Chamber of Commerce asked the agricultural colleges in the New England States to make surveys and report to them. Uniform blanks were used in order to make the returns comparable. The farm management demonstrator from M. A. C. supervised this work, not only in Massachusetts but in heading up the work of the other States. The blanks and all questions were passed on by our college dairy committee.

Two hundred and fifty farmers were selected by the farm management demonstrator in consultation with the county



agents. Our college furnished seven men selected from the agronomy, animal husbandry, dairy and farm management departments. Their expenses were furnished by the Public Safety Committee. One man and his expenses were furnished by the Quaker Oats Company of Boston. These men visited the farmers and secured eighty-seven complete records.

The report of this New England work has been used not only in Boston but by milk committees in other cities. The information received in this survey was used and is being used, with changes in cost of variables, to determine the fair price of milk to the producer, thus avoiding a milk strike. Very favorable comments have been made on the results of the survey, both as to figures obtained and good accomplished by their use.

The poultry department co-operated with the county farm bureaus and the Public Safety Committee in a two weeks' "campaign" throughout the State of Massachusetts. The object of this work was, first, to collect accurate information about existing conditions among poultrymen; second, to attempt to check the injudicious sale of hens and pullets, but to encourage intelligent culling of the unprofitable birds; third, to commend the hatching of chicks through the month of June, where conditions warranted late hatching.

Nine men were employed to execute this work. In so far as possible, one man was located in each county, and he was given an outline of the uniform advice and data which had been adopted at a previous staff meeting. Public gatherings, farm visits and the press offered the best means of presenting the poultry doctrine, and these methods were adopted in each county. Accurate data from various sized flocks were used to show poultrymen what they could expect under existing conditions. The work, as a whole, was well received. While it has not been possible to measure results in a definite way, reports from different sections of the State indicate that the effort was worth while.

#### **Vacations.**

All the men on the staff, because of the tremendous pressure under which they were working during the spring, were advised to take the full month's vacation. Practically all of the teach-

ing staff, some of whom are entitled to the longer vacation period, surrendered their privilege and gave their energy unreservedly to assistance in some form of agricultural mobilization work.

### Publications.

The college agreed to issue, in co-operation with the Committee on Public Safety, special publications bearing on many of the particular problems that farmers would have to meet in speeding up production. A list of about 35 special bulletins was prepared during the year. Director Hurd devised a plan of post-card bulletins printed on both sides, which gave in compact form the best advice that the college could offer on these subjects.

### Use of College Land for Food Production.

The trustees decided that all available areas of the college estate should be used in growing more crops. The following table shows what was done as war emergency production besides the regular crops usually grown.

CROP.	Acreage.
Beans, . . . . .	13
Potatoes, . . . . .	8
Corn, . . . . .	7
Oats, . . . . .	4
Squash, . . . . .	3
Total emergency acreage, . . . . .	35

### The County Farm Bureaus.

The "projects" of the Committee on Food Production and of the Food Administrator have guided the major efforts upon which the farm bureaus have been spending their energy this year. In March all other plans were laid aside and the work for the season redrafted on the basis of the needs of the State during war times. The county food committees were, in nearly every case, comprised of men and women who were appointed by the advisory board of the farm bureau. The county agents

acted as secretaries of these county committees on food production. When the organization of town food committees was suggested, the farm bureau used its organization to assist in securing the emergency committees in 244 towns. The work of the town committees was explained, and the local people were assisted in securing fertilizers, seed potatoes and land on which special work might be done.

In order to arouse the people of the State to a realization of the needs of this project, the farm bureaus assisted in over 400 meetings during the months of April and May. In one county alone the county agent addressed over 8,000 people in four weeks, urging increased production of food crops. The demand for the services of the county agents was so great that in four months the employees of the farm bureaus increased one-third, and the office force doubled. This was made possible by the appropriation which was made to the various counties by the Committee on Public Safety from its State appropriation, the conclusion being reached that the farm bureaus, having already been organized to direct and use efficiently trained workers, could secure results more rapidly than could be secured by the development of a new system. The farmers of the State, thoroughly aroused, increased their acreage of crops greatly, this increase being particularly noticeable in such crops as corn, beans and potatoes. The work with people other than farmers resulted in an extraordinary increase in home gardens.

The county farm bureaus more than justified themselves all over the country. Massachusetts was peculiarly fortunate in the fact that every agricultural county was fully or nearly organized for farm bureau work when war was declared. The food production and conservation campaign in the field was carried on through these county farm bureaus. On June 20 there were available for this work 20 men, 6 women and 10 clerks. On December 1 these employees numbered 30 men, 14 women and 20 clerks. Aside from these employees there were 14 men and 6 women who were employed for part time during the season.



### Federal Aid.

In August Congress passed a law granting extra appropriations for food production and conservation work. Approximately \$70,000 was assigned to Massachusetts, and was apportioned as follows, the work being administered in every case through the college: \$54,500 was apportioned for food conservation from September 1 to June 30, and provided for a State leader for city work, 3 assistant county and city leaders, 9 county home demonstration agents, and also for assistant city organizers and supervisors in perhaps 30 cities, about 10 of these having now been provided. This is the regular educational work in home economics, food thrift, preserving and canning, etc., but carried out not only in all the counties of the State but also in the urban communities. Of course, in this field there are scores of agencies at work, and in all we are co-operating most fully with Mrs. Nathaniel Thayer, who is the official representative of the Federal Food Administration in Massachusetts, and with the State Executive Committee on Food Conservation.

Seven thousand dollars was set aside for junior extension club work for the same period, and permits the employment of an assistant State supervisor and ten county club leaders.

The sum of \$8,000 was set apart for county agent work in marketing. This fund permitted the assignment of Mr. E. Farnham Damon as assistant county agent leader, with four district marketing specialists, in the Connecticut Valley, Worcester County, the area northeast of Boston and the area southeast of Boston. This work is educational in the subjects of marketing and distribution. Added to this sum was \$36,000 granted to the county farm bureaus by the Public Safety Committee.

### War Work Problems.

*War Work Economies.* — In common with other institutions and with individuals, it behooves the college to practice the most rigid economy during this period of stress. But what is economy and how can it be actually achieved? The drop in student attendance by no means indicates the practicability of an equivalent cut in expenditures. As a matter of fact, the

so-called "overhead" expenses can be reduced very little unless whole courses or departments are abolished for the time being. For example, in the matter of the heating of buildings it is practically impossible to reduce coal consumption unless entire buildings are completely closed. What is true of maintenance is in large measure true of instruction costs. It is possible that some radical changes may be necessary for another college year. If we knew more accurately what our attendance would be, it would be much easier to make these adjustments. To what extent, it may be asked, are we justified in dismissing members of the teaching staff? We are holding positions open for those who have gone into military service. Is it not wise, on the whole, to maintain the teaching corps, and if their regular work be reduced because of decreased attendance, make it possible for them to render some form of special war service?

*Research.* — The staff of the experiment station feel that it would be exceedingly difficult and unwise to give up projects that are under way in research, for the reason that they are all connected more or less intimately with the soil or with animal or crop production, and consequently have an intimate bearing on the whole question of food supply. It is important, moreover, if we can possibly get the funds, to take up some special lines of research bearing upon the food emergency. This is notably true in connection with the canning and preserving of food. Very little scientific work has been done in this field. We are remarkably well equipped, both in material equipment and in men, for this work. Studies in the cost of production of milk have already been made, but more work needs to be done. Food surveys, both as to supply and demand, could be carried on to good advantage through our department of agricultural economics if the money were forthcoming.

*Teaching.* — We are putting forth every effort to maintain the standard of the institution and to keep intact the course of study. It is very difficult to do this, partly because so many of the students have gone, and because those who are left are more or less uneasy on account of the war situation. It is not an easy problem to keep up the standards, nor to decide what changes can be made in the number of the staff, salaries, courses of study, etc. We have no means of knowing how long

the war will last. As soon as it is over we feel that the college must be prepared for a great influx of students. The interest in food production and supply will be greater than ever.

*The Extension Service.* — Of course, in one sense, the war service of the institution in the field has been entirely extension work. There has been an enormous increase in this work, and we could have used two or three times as many men as we have had at our disposal. In order to be of the largest service to the State we ought to have practically twice as many workers as we now have in the field.

*The Staff.* — The depletion in the staff raises an important problem, especially in connection with the younger men. It is almost impossible to get young men to take the places of those who have gone.

*The Students.* — It has already been indicated that the uncertainty of the situation makes it difficult not only to keep up the student body but to maintain the quality of work. The students, however, are very earnest and are doing their part as well as can be expected. The spirit of the student body is in every way magnificent. Fortunately, the reduction in the number of students does not deprive us of any large income, as it does in the privately supported colleges. On the other hand, it does not help us very much in reducing expenses, unless we deliberately cut out courses and departments; in other words, unless we fail to keep the institution "in trim" for the work it must do when the war is over.

### **The Food Supply and the College.**

The war has not only accentuated the problem of food as a phase of war preparation and service, but it has also called attention to the fact that the question of food supply has a certain unity, and must be considered more fully as a single problem, not only for communities and for nations but for the world as a whole. The producers cannot be unmindful of their obligations to consumers, nor the consumers forgetful of the needs and rights of producers. The duty to save food everywhere, from the field to the table, has new meaning. The need of economies in production and distribution, as well as in use, are understood more clearly than ever before.



All this gives a new significance to the work of the agricultural colleges. It is rather strange, I think, that their function has been regarded as that of dealing only with the production of food and other things that can be grown from the soil. But it is becoming more clear now that they must deal with all the interests of those who till the soil. The work of the college must follow these interests as far as they may go, and it is apparent that they go a long way beyond the matter of production.

But I am wondering if we may not carry this matter even a step farther. Congress has placed in the hands of the Department of Agriculture — and, through this Department, in the hands of the various agricultural colleges — the task of teaching home economics to the people, not alone in the country but also in the city. Why should this not be a permanent function of the college? In this emergency the members of the staff of our college have been called upon to testify as expert witnesses concerning the costs of the production and distribution of milk, — a purely economic and business problem, not primarily a question of technical production. Why should our people be interested in the distribution of milk more than in the distribution of fruit or vegetables or hay? In other words, does not the very logic of events at least, if not a theory as to the work of the agricultural college, justify the statement that hereafter the college must concern itself with all the problems of food supply, and through its research, through field studies, and in its extension work, as well as in its courses of study, cover on the material side the entire problem of food supply? I should like to raise this question in a very definite way, because it has a most intimate bearing upon the work and activities of the institution, and in a State like Massachusetts, which is so thoroughly urban, a very important bearing upon the question of financial support. And this leads me to a few words concerning

#### **Additional Funds for War Service.**

I wish to urge the need of special funds for war service. This matter will come before you through the appropriate committees, but I think that we should have money from some

source for special projects of an investigational character already referred to in this report, and that we should also take on, as soon as possible, a number of additional persons as members of the extension staff for service in the field. Now that attention to food has become recognized as a part of the war policy, is it not clear that the agricultural college, if it can serve the Commonwealth in times of peace, can serve her more greatly in this time of war? If agricultural education is worth anything, it is supremely worth while during the period of the war.

## REVIEW OF THE YEAR.

### CHANGES IN DEPARTMENT HEADS.

In March Arthur B. Beaumont came to the institution to assume the responsibility of head of the department of agronomy, with the rank of associate professor, filling the vacancy caused by the resignation in June, 1916, of Prof. Sidney B. Haskell. Professor Beaumont was born and reared in the south, graduating from the Kentucky State University in 1908; after five years of successful teaching in Oregon Mr. Beaumont returned to Cornell University for graduate study.

After three years of efficient service Associate Prof. Arno H. Nehrling, head of the department of floriculture, resigned in March, 1917, to enter private business in Indiana. Professor Nehrling was exceptionally well trained in floriculture, and continued here the development on a very high plane of the work inaugurated by his predecessor, Prof. Edward A. White. Professor Nehrling was a strong teacher, a good administrator, and enjoyed the complete confidence of the florists of the State. His resignation was a distinct misfortune to the institution. From March until the close of the college year the work of the department was carried on by Mr. Clark L. Thayer of Cornell University. Mr. August G. Hecht was selected for the position of head of the department, and assumed this responsibility in September. Mr. Hecht graduated from the University of Illinois in 1914, at which institution he has for three years been engaged as instructor, while at the same time pursuing graduate work. Professor Hecht is well trained both professionally and in the practical work of floriculture, and is proving to be an acceptable successor to Professor Nehrling.

When the first officers' training camp was opened at Plattsburg in May, 1917, Capt. Henry W. Fleet was ordered by the War Department to assume important responsibilities in connection with the training of officers at Plattsburg. Captain Fleet was in charge of our military work for a little over two years, and in that period won the complete respect and esteem of students and faculty; he elevated the work in military drill to a very high plane of efficiency, while at the same time



correlating it with the other activities of the college in a most acceptable manner. Late in the summer the War Department detailed Col. Richard H. Wilson as commandant at this institution. Colonel Wilson is a graduate of West Point, and has had a very successful career as an army officer. The college is fortunate in having an officer of high rank assigned for the direction of its military work. (A complete list of changes in the various staffs appears as Tables I. to IV.)

#### MR. HARMOUNT'S DEATH.

During the year death has claimed an active member of our teaching staff; Mr. William L. Harmount, after a serious illness of about four months, passed away at his home in Branford, Conn., July 20. Mr. Harmount came to the college in 1911 as instructor in French, and during the years of his service here gained the admiration of students and faculty alike. Although unassuming and retiring by nature, he won a warm place in the hearts of all his students because of his teaching ability, and because of his genuinely human interest in all who came in contact with him. Among his teaching associates he won high regard as a gentleman, as a teacher, and as a scholar of high intellectual ideals.

#### ATTENDANCE.

The total registration this autumn is 500 as compared with 680 a year ago, or approximately 75 per cent. of last year's attendance. Doubtless the falling off is due to the war. At least 100 men, who would otherwise have been here in the three upper classes this year, are in the army or with some other branch of the armed forces. The freshman class enrollment is 118 as compared with 170 of last year, and with 211 of two years ago. This decrease in the entering class is probably chargeable to a number of causes, such as the general unrest among young men, the consciousness of the possibility that they may not be able to complete their course before being drafted, and the unusually high wages which they can command in the various industries. (See Table VI. for analysis of enrollment.)

## UNCLASSIFIED STUDENTS.

In the spring of 1917 the faculty made more liberal provisions for the admission of so-called "unclassified" students; the new rule allows high school graduates to enter who are interested in the practical work of the college, but who feel that they cannot come for the four years' course. High school graduates of eighteen years of age, or older, will now be admitted without examination or the presentation of the usual certificate required for admission to the regular course. These students may remain in college for not more than two years, and are restricted in their work to the courses in technical agriculture and horticulture. That this ruling will meet a very definite need is evidenced by the fact that this autumn, in spite of war conditions, we have an enrollment of 50 unclassified students as compared with the enrollment of 29 of a year ago. This work is somewhat comparable with the special two years' courses offered at various other agricultural colleges.

## RESERVE OFFICERS' TRAINING CORPS.

In harmony with a plan developed by the War Department for the training of reserve army officers, there was established at this institution during the winter of 1917 a branch of the Reserve Officers' Training Corps. Under the requirements of this system all students in the institution will drill and pursue studies in military science for two years; at the end of this time students who so choose may, if approved by the president of the college and the commandant, continue their military training on an intensified basis for the remainder of their college course. These students are required to attend military training camps in the summers, and upon graduation from the college may, provided they meet certain requirements, secure at the expense of the government such further training as will place them as commissioned officers upon a reserved list for a period of ten years. The government will in ordinary times furnish the uniforms for the lower classmen, and to those who are admitted for the advanced training the government will allow a cash payment for rations which will assist materially in meeting their college expenses.

## COMMENCEMENT.

On account of the war, members of the senior class began to leave college in March, and all members of the class had by the latter part of May secured positions away from the college, either in military service or in some form of agricultural mobilization. Necessarily the usual plans for Commencement had to be entirely abandoned; it seemed desirable, however, to arrange for simple Commencement exercises, and to secure the attendance of as many as possible of those entitled to diplomas. Saturday evening, June 30, was therefore set aside for Commencement. The degree of bachelor of science was conferred upon 103 men and one woman. Of this number 65 returned to receive their diplomas in person. Nearly all of those who were unable to return were in military camps, although a few were engaged in important agricultural enterprises from which they could not be spared even for a day. To those who could not be present the diploma was mailed. On June 27 the degree of master of science was conferred upon eight members of the graduate school.

The Commencement program consisted of a dinner at Draper Hall, to which all seniors and members of the faculty were invited. The attendance was nearly 100. Following the supper were brief informal speeches by the president, the dean and representatives of the graduating class. At 8 o'clock the formal graduation exercises were held in the auditorium. The program consisted of music, a brief address by the president, and the awarding of the diplomas.

## FIFTIETH ANNIVERSARY.

Soon after the outbreak of the war, in the spring, it was decided to postpone the plans for the celebration of the fiftieth anniversary which was to be held in October, 1917. The brief history of the college, on which Mr. L. B. Caswell of the class of 1871 had been working for some months, has recently been completed. Work on the college bibliography is also going forward. The pageant master, Mr. Langdon, was instructed to finish the writing of the pageant, and the pageant music was completed by Mr. Philip G. Clapp of Dartmouth College. The pageant and its music, therefore, are in such condition that



their presentation can be arranged for at such future date as it may be considered expedient on which to have the postponed anniversary celebration.

Before leaving Amherst, Mr. Langdon read before our faculty, students and friends the principal parts of the pageant. Mr. Clapp was present, and gave a piano rendition of the prominent portions of the music. The opinion was unanimous that the pageant, if it could have been presented, would not only have been an attractive feature of the celebration, but would also have portrayed in a most impressive manner the development of New England agriculture, and the relation to it of the Massachusetts Agricultural College. We most earnestly hope that the pageant may be presented at some future date.

#### THE REUNION OF THE CLASS OF 1871.

October 2 marked the fiftieth anniversary of the coming on to the campus of the pioneer class of 1871. It seemed unwise to allow this anniversary to pass without some suitable recognition. Accordingly, arrangements were made with the class to hold a reunion here; the date selected, however, was October 12, in order that the class might be here after college should open. The following program was arranged and carried out: —

##### *Thursday Evening, October 11.*

Informal gathering at "The Davenport."

##### *Friday, October 12.*

8.30 A.M. Business meeting of the class at "The Davenport."

10.00 A.M. Class photograph at "The Davenport."

10.30 A.M. Auto tour of the college and environs in charge of campus committee on reception.

1.00 P.M. Dinner at Draper Hall; ladies invited; short addresses as follows: —

Greetings on behalf of the faculty, President Butterfield.

Greetings on behalf of the alumni, Dr. C. A. Peters, Secretary of the Associate Alumni.

Greetings on behalf of the trustees, Charles A. Gleason, Vice-President.

Response by Mr. William D. Russell, class of 1871.

Brief statement concerning pageant, William C. Langdon, Pageant Master.

Brief statement concerning history, Dr. Henry T. Fernald.

Brief statement concerning bibliography, Mr. C. R. Green.

3.30 P.M. Public meeting in auditorium; address by Mr. William Wheeler, subject, "The Half Century Mile Post."

4.30 P.M. Informal reception in Room 114, Stockbridge Hall, to members of the class of 1871.

6.30 P.M. Class dinner at "The Davenport."

Fourteen of the 17 living members of the class were here; in addition, 3 members of the class who did not graduate joined with the others in their anniversary.

#### THE BOWKER AUDITORIUM.

I desire in this report to record formally the action of the trustees in giving to the auditorium in Stockbridge Hall the name of The Bowker Auditorium in recognition of the efficient and loyal service rendered the institution by William H. Bowker, a member of the class of 1871, and for over thirty years a trustee of the institution.

#### LEGISLATIVE APPROPRIATIONS.

The college asked the Legislature of 1917 for appropriations totaling \$488,200 for buildings, equipment and improvements to the property. The college also asked for \$35,000 for buildings, equipment and maintenance for the market-garden field station at Lexington. During the winter, as the price of coal and other supplies advanced, and as additional demands were made for an increase in the wages of laborers, it was deemed advisable to ask the Legislature for an emergency appropriation of \$25,000 to help meet these unexpected financial obligations.

The Legislature finally agreed upon the following appropriations: \$40,000 for improvements at the power plant, including a new chimney and an additional boiler; \$33,500 for miscellaneous equipment and improvements; \$10,000 for buildings, equipment and maintenance of the market-garden field station; and \$17,500 to be added to the appropriation for current expenses.

### ADDITIONS AND IMPROVEMENTS TO THE PLANT.

Contracts have been let for a new 450-horsepower boiler at the power plant, a new 150-foot radial brick chimney, and testing apparatus that will bring the plant to first-class condition. The roof on the power plant has also been raised. One of the most important improvement items was the rebuilding of the house at Mount Toby; this has been put in first-class condition, and is now occupied by a caretaker of the reservation. An additional glass laboratory for the department of botany has also been built. Numberless small changes have been made to keep the institution in first-class condition.

### THE INVESTIGATING COMMISSION.

The investigating commission, appointed under legislative resolve by Governor McCall in the summer of 1916, was originally instructed to report to the Legislature in January, 1917. Finding that the time thus allotted was not adequate to make a thoroughgoing investigation of the work of the college, the commission received authority to postpone the completion of their report until January, 1918. The commission has continued its work during the year, and it is expected that the report will be made early in 1918.

### THE WORK OF THE FIELD AGENT.

In July, 1916, a field agent was appointed. At that time there were no established lines of work for an appointee to this new office to take up. The important task of organizing adequate publicity is so new that I wish to quote somewhat from Mr. Gould's report.

The problem in college publicity seems to concern itself with the systematizing, standardizing and centralizing of the publicity resources of the college. The primary function of the office was to collect and disseminate information concerning the Massachusetts Agricultural College. There was also turned over to this office the management of such institutions as high school day, alumni day and various conventions held on the campus.



*The High School Project.*

The purpose of this campaign was to acquaint Massachusetts high school men with the college. An appeal was made to the students in college to aid in this particular phase of publicity work in high schools. Their response was encouraging. Thirty-nine high schools were visited and 194 individual interviews with students were held. The individual consultations were held with those students who should have been or were seriously interested in M. A. C. Through this work it became evident that —

1. M. A. C. is little known and understood by a large number of high school men.

2. There are many men contemplating M. A. C. who are not really familiar with the work of the college.

3. There are not a few high school principals who are unfamiliar with the work of the institution.

*The Project with the Granges.*

Following the custom already in vogue, M. A. C. days with Pomona granges were arranged for with most of the Pomonas and a few locals. Illustrated lectures on the work of the college were given at 19 such meetings, reaching 1,505 people. The value of this program is doubtful.

*The Excursion Project.*

A project for community excursions to the college was prepared and presented to the county agents for their co-operation. No excursions of this special nature ever reached the campus, but 8 distinct organizations and several odd parties, totaling 1,162 persons, visited the college grounds between July 1 and Nov. 1, 1917.

*Publications.*

Publications issued from the office consisted of a Campus Guide, a booklet for high school men descriptive of the college, and a descriptive booklet for the department of landscape gardening.

**THE THREE-TERM PLAN.**

The academic year ending last summer was the first year in which the college has operated under the new three-term plan. It is still too early to judge the results. So far as first impressions may be a guide, it may be said that the plan has worked well. One feature of the scheme, which eventually may make it actually a four-term plan, was to have special courses during the summer. Several of these had been planned for this last summer, but had to be given up on account of the war emergency.

### THE SMITH-HUGHES ACT.

During the year Congress passed a law known as the Smith-Hughes Act, appropriating Federal money for vocational education of secondary grade in the industries, agriculture and home economics. The law is administered in each State under a board of vocational education, which in the case of Massachusetts is the State Board of Education. The chief interest of the college in the operations of this act is twofold, — first, that we think it fair to assume that the Agricultural College will be the training school for teachers of agriculture under this act; and secondly, it gives a strong impetus to the development of secondary education in agriculture, already well started in Massachusetts under the State Board of Education, and gives added importance to the need of a co-operative plan with reference to the agricultural development of a State system of agricultural education. Your president is in consultation with the Commissioner of Education on all these subjects.

### THE ANTI-AID AMENDMENT.

The college has always regarded itself as a public institution, and consequently has not supposed that it would be affected by the passage of the so-called anti-aid amendment to the State Constitution. It may be desirable, however, to have some legislation that will put on the statute books certain definitions of status that heretofore have given rise to some uncertainties in the State House.

It is understood that the method of electing members to the State Board of Agriculture will have to be changed. This is a matter that does not primarily concern the college, except as it bears upon the general question of the intimate relationship between educational and administrative work in such a field as agriculture. Furthermore, the fact that the secretary of the Board and the president of the college are, respectively, ex-officio members of the other Board brings up a detail.

The county farm bureaus, which have developed so rapidly in this State during the past few years, are considered by the United States Department of Agriculture, and by the college as well, as an organic part of the nation-wide system of agri-

cultural extension service inaugurated by the congressional Smith-Lever Act. As a consequence, any legislation affecting these county farm bureaus is of concern to the college. The anti-aid amendment seems to make necessary the organization of these bureaus as public institutions rather than as corporations. We are co-operating, therefore, with the Federation of County Farm Bureaus in the endeavor to work out proposed legislation that will meet the requirements of the amendment, insure the effectiveness of the bureaus, and regard the interests of the college and the Department of Agriculture.

#### CO-OPERATION WITH THE BOARD OF AGRICULTURE.

During the early part of the year the State Board of Agriculture and the trustees of this college endorsed a statement of principles that should govern a division of labor between the two Boards and the institutions they represent. The statement is as follows:—

- I. The State Board of Agriculture and the Massachusetts Agricultural College are, or should be, regarded as public agencies, to be supported by public funds and to be subject to appropriate State control.
- II. The chief function of the State Board of Agriculture is administrative.
- III. The chief function of the State Agricultural College is educational.
- IV. There should be a standing joint committee on co-operation and adjustment, comprised of two or more members of the Board of Agriculture and a similar number from the Board of Trustees of the college, in addition to the secretary of the Board and the president of the college.
- V. There should be distinct written agreements on the form and method of division of labor in all cases where there is, in the opinion of either institution, any overlapping or duplication of work.
- VI. It is understood that in the matter of employment of members of the college staff as executive officers in the control or other work of the Board there will be definite agreements between the Board and the college:

The gist of this statement lies in the assignment of administrative work to the Board of Agriculture and of educational work to the college. The application of this principle will call for the consideration of some specific questions, such as the inspection of fertilizers and feedstuffs now administered under



the direction of the Board of Trustees, and the Farmers' Institutes now carried on by the Board of Agriculture. Questions will also arise as to just what are administrative and educational activities. As a rule, these are clearly defined, but there will be instances where conference will be necessary to determine the correct assignment. I would recommend, therefore, that the trustees join with the Board of Agriculture in maintaining a joint committee of conference.

It is interesting to note that this autumn the Commissioners of Agriculture of the United States and the Association of American Agricultural Colleges and Experiment Stations joined in a somewhat similar statement of functions, in which this fundamental principle concerning administrative and educational work that we have already adopted in Massachusetts was the main feature.

#### **The Year in the Departments of Undergraduate Instruction.**

The dean reports that to the end of April the work of his office concerned itself with the usual routine of attendance, discipline and scholarship. At the beginning of the year the president appointed seven class advisers, three for the freshmen, two for the sophomores, and one each for the upper classes. The work of these advisers, especially the freshman advisers, was helpful to a good many students, not only in respect to scholarship, but in respect to personal problems and other matters. This larger supervision of the men justifies the continuance of the arrangement this year, and will justify the extension of it in the future. After the end of April, when the boys were allowed to go out on mobilization work, giving them credit for the term's work for doing twelve weeks of approved work, the task of following them up and keeping in touch with them devolved upon the dean's office. Inasmuch as there were reports to be received from the 500 odd students at the end of each month's work, and one each from employer and parent at the end of the three months' work, the dean's work was comparatively heavy. The correspondence was necessarily increased, inasmuch as many of the boys were constantly changing their positions and asking for information

along numerous lines. The records were not complete, of course, until towards the end of the summer, so that the last year's work continued right up to the first days of the present school year. In the main, however, it was a pleasant task; the great majority of the boys were intensely earnest and deeply interested in their work. They made a fine record, — a record of which the college should always be proud.

Until the early spring the work of undergraduate teaching went on much as formerly. As a result of the war, however, a number of adjustments have been made. The work of practically all the departments has been modified to some degree better to meet the immediate demands of the hour. At the beginning of the present college year new courses were introduced for the purpose of more adequately preparing our students for supervisory positions another year. Additional work in conversational French has also been undertaken.

For the most part, the department heads have been retained, but a number of men in subordinate positions have left, some to enter the armed forces of the country, and some to take positions of larger responsibility elsewhere. A large number of teachers have been utilized during the spring and summer for special work in connection with the war service which the college has undertaken. One of the most urgent needs growing out of our war work is that of a department of horticultural manufactures. Professor Chenoweth has during the past months undertaken considerable work of this character in connection with his teaching in the department of pomology. For some years we have wished to develop work in this subject, and the emphasis now being placed upon the necessity of proper food conservation and preservation has driven home the importance of the immediate establishment of this department of horticultural manufactures.

The departments of poultry husbandry and agricultural economics in particular made use of the emergency in the spring to give their students field work in their respective subjects.

The department of agricultural education has made an analysis of the M. A. C. men who are engaged in educational work, and has also carried on correspondence with some 300 colleges with regard to secondary school agriculture as a sub-

ject for entrance credits for college. Correspondence has also been carried on with the principals of secondary schools in Massachusetts relative to the introduction of agriculture into the schools as a non-vocational subject.

There have come to practically all departments this year an unusual number of demands for trained men to accept attractive positions as teachers, farm managers and experts in other agricultural vocations. Only a relatively small percentage of these positions have we been able to fill.

Needs of various departments, which have heretofore been emphasized, have during the past year become even more pressing. In general, the teaching staff is adequate for the present demand. Several new buildings are, however, very badly needed. The more important of these are a new drill hall and armory, a library, a chemistry building and poultry houses.

After much study and conference there were developed during the past college year plans for work in technical agriculture and horticulture, designed to give every man entering the institution at the outset a general knowledge of the entire field of agriculture. This work was begun at the beginning of the present college year, and thus far it appears that the work has been conducted in an entirely satisfactory manner, and that it is meeting the hopes of its advocates. Owing to the resignation of Prof. John T. Wheeler, who has been the leader in developing this work, the plans for it are necessarily interfered with. We hope, however, that no serious interruption in the work will result.

In the department of physical education, owing to war conditions, a required course in field games has been introduced this October for freshmen and sophomores. This has been possible by the completion of the athletic field, which gives us ample room for handling large classes in outdoor games. During the winter months all juniors, sophomores and freshmen will be given two hours per week of special exercise prescribed by the War Department for students in colleges having a Reserve Officers' Training Corps. The shortening of the college year has made it necessary to abandon intercollegiate football and baseball. During the months of October and



November we have conducted a series of interclass football and track contests which have been very successful. About 125 different men participated in each Saturday program. The present development of general participation in games is due almost entirely to the completion of the athletic field. This development of outdoor work serves to emphasize more than ever the utterly inadequate indoor equipment. From December 1 to April 1 the drill hall floor is in almost constant use until 9 o'clock at night.

Under the provisions of General Orders No. 49, War Department, dated Sept. 20, 1916, an infantry unit of the Reserve Officers' Training Corps was established at this college on April 1, 1917, and since that date all instruction, both practical and theoretical, has followed strictly the curriculum prescribed in the orders named. The amount of time devoted to military work has generally been far beyond the requirements of the War Department. During the second and third terms last year special classes in junior and senior tactics of five hours per week were given. This training was in preparation for examination for admission to the Officers' Reserve Corps. During the third term seven hours per week were devoted to practical outdoor work, and the satisfactory progress attained was made the subject of favorable report by the officer making the annual inspection directed by the War Department. The military department of this college has co-operated with the Intercollegiate Intelligence Bureau of Washington, D. C., and has furnished to it a number of names of men fitted for special positions, such as agriculturists, chemists, editors, statisticians and draftsmen, etc.

During the year 3,162 volumes have been added to the library, making a total of 56,090. This number of accessions is smaller than for some years, and is largely accounted for by the entire absence of foreign books and periodicals. More work has been done by and for the faculty and others not connected with the institution. Requests by letter and otherwise for information concerning the purchase of books and periodicals, and the use of agricultural literature in general, have increased and become quite a factor in the work of the library. Records concerning the library extension work show an increase above

all previous reports. In answer to requests from 56 libraries in the Commonwealth, 820 books and 170 bulletins were loaned from this department. Library leaflets listing books on better farming, dairying, home economics, farm machinery and vegetable gardening were published during the year. Up to this writing 28 leaflets in editions varying from 1,000 to 3,000 copies each, make a total printing of 36,000 copies. All of this work has been carried on with as much dispatch by the members of the library staff and others as the crowded quarters and disarranged equipment would permit.

### Short Courses.

Owing to war conditions several additional short courses were developed. There were 110 pupils registered in the winter school of 1917, representing several States. The eighth farmers' week was held from March 26 to 30, with an attendance of 800. Polish farmers' day was held March 26, the attendance being 300.

In order to meet the demands of production, a series of two-day schools were held at the college during May. The registered attendance was not large, but some of the courses were well attended, and the work well worth while. One and two-day schools were held in 85 communities throughout the State from May 24 to August 22. The attendance was 10,213, with 12 instructors. The beekeeping school was held at Dalton with the usual success. The apple packing school was discontinued. A series of four-day schools for conservation work was held at the college during July. These schools were well attended and unusual enthusiasm was displayed.

A summer school of agriculture and country life was held as usual during July. The attendance of the school was somewhat affected by the pressure of the times. With the summer school was united a school for Y. W. C. A. workers, conducted under the auspices of the northeastern field committee of the National Young Women's Christian Association. This brought into the school several students from various States, who put much enthusiasm into our summer school. Some of the regular courses were discontinued in order to establish new courses along the line of conservation and production. The Poultry

Convention was held in July, and a good deal of enthusiasm was created. To the Ministers' Conference and Conference for Rural Organization were invited the leaders in the emergency war work, and the conference took on quite a successful appearance.

The supervisor of short courses calls attention to the fact that the short courses should have better financial support; the heads of departments are constantly calling for extra instructors and larger appropriations for laboratory supplies; also, one-year technical courses, such as poultry, animal husbandry and horticulture for students not of college grade; continuation courses of one year for graduates of agricultural high schools and departments of agriculture in high schools; a summer school of six or twelve weeks for pupils of college grade, with college credit, should be established.

It is the aim of the college to organize the short course work so that the citizens of the State may have a chance to come to the college for help and assistance, be it for a period of three days, three months or for a year. It is desirable that all the short courses be organized under the supervision of one man who should be given time to do this work.

### **The Year in the Graduate School.**

During the year further progress has been made in the organization of the graduate school, and in the working out of a number of minor problems connected with the direction of this work. The more notable advances during the year are the formulation by the graduate staff of rules governing the theses presented for the graduate degree; a more definite basis has been established for the granting of credits for advanced degrees; the work required of graduate assistants has been standardized. Only half as many graduate students are registered this autumn as a year ago; this may be accounted for by the fact that the demand for trained men is this year almost unprecedented, and that there are most attractive opportunities for all such men who are not in military service.



### **The Year in the Experiment Station.**

The station has been fortunate during the past year in retaining the services of the members of its staff in direct charge of important lines of investigation, with one exception. Dr. Van Suchtelen resigned to accept a position in his native country, Holland, and has been replaced in the department of microbiology by Dr. Itano. We have, however, lost a considerable number of assistants, chiefly through the operation of the selective draft. This in some cases has been followed by considerable interruption in lines of work in progress, as it is found difficult to replace the men thus lost with thoroughly qualified substitutes. Three important additions have been made to the station staff during the year — a field pathologist, an assistant in entomology and an assistant in the department of agricultural economics. The field pathologist has done a large amount of investigational work on the grounds of market gardeners, and experiments have been begun in the spraying of celery for blight and of beans for anthracnose. The new assistant in entomology, besides continuing the observations on the red spider, has undertaken the study of various insects doing serious injury in market gardens of the State, and an effort will be made, both on the pathological and entomological sides, to render the utmost possible assistance to the market-garden interests of the State, with a view to the prevention of injury to our more important food crops.

In the fifty-fourth annual report of the college will be found a somewhat full statement of the various lines of investigation in progress at the time of its preparation, and attention was called to the fact that in most of these continuance for a considerable number of years is essential. A restatement, therefore, of the ground just referred to appears to be unnecessary at this time.

The serious situation as affecting food supply due to the European war suggested the desirability of a careful consideration of the question as to whether lines of investigation in progress should not be modified and new ones undertaken. With a view to getting suggestions from individuals who it was believed are as well qualified to make such suggestions as

any in the State, a meeting of the advisory council was called in June. The investigations in progress were quite comprehensively, though of necessity briefly, described, after which opportunity was given for discussion and suggestions. If we may judge by the fact that no important new investigations were suggested, it would appear that the scope of our work as affecting food production and distribution was regarded by the members of the council present as at least fairly satisfactorily covering the ground.

During the past year, however, we have undertaken a few new lines of investigation. In connection with the cranberry substation in Wareham we have established in co-operation with the Bureau of Plant Industry of the United States Department of Agriculture a plantation of swamp blueberries, with a view to investigating the possibilities of blueberry culture. The very high price of the cereal grains has indicated the probability that under existing conditions Massachusetts may profitably engage in the production of these grains on a much more extensive scale than in recent years. A considerable area on the Tillson farm and a smaller area on the home grounds of the station, therefore, are being used for the trial of nine different varieties of winter wheat and of new varieties of winter rye and winter barley. The chemical department, in co-operation with several other experiment stations, under the general suggestive leadership of Dr. H. P. Armsby, is beginning a series of experiments to determine the minimum protein requirements of growing animals. The solution of this problem should have an important bearing upon the economy of meat production. A number of forage crops new in the agriculture of the State and a considerable number of feeds also relatively unknown, have been under investigation as regards their value and adaptability to local conditions.

Important investigations which should throw light upon the most satisfactory methods of feeding horses have been begun during the year. In these investigations the digestibility by horses of the important foodstuffs and their available energy in the animal economy will be determined.

Experiments having indicated the superior value of the types of rust-resistant asparagus produced in the breeding work in

Concord, a considerable area has been set with plants of the best variety for the purpose of producing seed in such quantities that the demand of growers of the crop for the new varieties may be met.

As the probable value of soy beans in the existing and prospective food emergency has been quite generally recognized, it was felt that there would be a large demand for seed, and a considerable area on the Tillson farm, as well as smaller areas on such of the station plots as could be used for the purpose, have been planted to one of the best varieties.

Fairly satisfactory progress has been made in the investigation into the causes of tobacco sickness, although a hail storm of exceptional severity did much damage to a portion of the plots.

The station has been exceptionally active in publication during the past year. Five important bulletins have been published and distributed, and no less than six others are either in the printer's hands or now ready to go forward.

Several of these are of permanent scientific value, and must ultimately prove useful through pointing the way to a more successful production of some of our important agricultural specialties or to a reduction in the cost of production, while others are of direct practical importance in the existing food emergency. In addition, several of the station workers have prepared for publication in scientific journals important papers dealing with results obtained in station investigations.

The control work of the station has received the usual careful attention. Bulletins reporting the results of the inspection of fertilizers and feeds have been prepared. The high price and scarcity of fertilizers seems to have suggested unusual activity on the part of those engaged in the production and sale of relatively worthless articles. An energetic campaign believed to have been quite successful was carried on with a view to preventing or limiting the amount of such sales.

The blood tests for bacillary white diarrhea, with a view to the elimination of this disease from the State, has been energetically prosecuted, and this is highly appreciated by our poultrymen.



## NEEDS OF THE STATION.

*Land and Buildings.* — The needs of the station were stated with some fullness in the report for last year, and it seems unnecessary to repeat the statement in full at this time. The needs particularly emphasized were the purchase of the Tillson farm and the erection thereon of a barn and dwelling house; the acquisition of land for a poultry farm; the purchase of the land leased for the stock and scion and other orchard experiments; the provision of a small orchard for the special use of the entomological department in connection with its study of spraying problems; the provision of buildings for experimental purposes at the market-garden field station. The purchase of the Tillson farm is the only one of these needs which has been met. For the other purposes indicated it is estimated that the following sums of money will be required: —

Buildings on the Tillson farm, . . . . .	\$10,000
Land for the poultry farm, . . . . .	8,000
The purchase of the Tuxbury land, used for the orchard experiments, . . . . .	12,000

It is believed that the small orchard needed for the work of the entomological department should be located upon land now the property of the institution and near the headquarters of the department.

*Increases in the Staff.* — Attention was called in the last annual report of the station to the fact that there is decided need for experimental work in rural engineering, in floriculture and in forestry. Provision for this work should be made at as early a date as possible. Particularly urgent are investigations in rural engineering and in forestry. Owing to the unusual conditions affecting the finances of the State, provision for these investigations may of necessity be somewhat deferred, but it is hoped that it may be possible to provide for increased work along lines of investigations particularly important in the present emergency within the limits of our present appropriations. The plan which seems to promise most important results of immediate and practical value is the employment of graduate assistants who will study, under heads

of existing departments, some of the problems most urgently demanding prompt solution. Food conservation and canning are among the more important of the subjects which should be thus provided for.

The experiment station is carefully inspected every year by a member of the staff of the office of experiment stations. The inspection this year was carried out by Dr. E. W. Allen, chief of the office, and it may not be out of place to call attention to the fact that after finishing his inspection, and just before leaving, Dr. Allen expressed his hearty satisfaction with the conditions he found. He stated that he felt that the administration was carefully looked after, and that we were accomplishing a very large amount of highly valuable investigational work. He added that it seemed to him that the scope and amount of work must be regarded as extremely satisfactory.

#### MARKET-GARDEN FIELD STATION.

In 1916 Mr. H. F. Arnold, then president of the Boston Market Gardeners' Association, introduced into the Legislature a bill requesting \$20,000 for land and buildings and \$10,000 for equipment and maintenance for a market-garden field station, which would be under the general direction of the Massachusetts Agricultural College. The Legislature of 1916 appropriated \$8,000 to cover all purposes above mentioned. The final location of the property was decided by the trustees Nov. 9, 1916, and the following month the purchase was consummated. The parcel of land selected is located in East Lexington, and comprises 12 acres. The purchase price was \$400 per acre. As weather permitted during the winter of 1916 and during the spring of 1917, the land selected was improved by the construction of roads, drainage, the removal of rocks, etc. The cost per acre for these improvements was \$167.48, making the final cost per acre \$567.48. In 1917 the trustees of the college requested \$25,000 for buildings and equipment and \$10,000 for maintenance to Dec. 1, 1918. The Legislature appropriated \$10,000, to be expended as follows: \$3,500 for a service building, \$1 500 for equipment, and \$5,000 for maintenance to July 1, 1918. Work on the service building was begun Aug. 7, 1917, and is now practically completed.

The appropriation for equipment and for maintenance is being spent as planned.

The farm operations of 1917 were confined to the growing of cabbages. Ten acres were set to this crop. The yield was fair, and the sales up to December 1 approximated \$1,500.

As yet the field station is not adequately equipped to meet the expectations of those most interested in it, and accordingly the direct beneficial results are not greatly in evidence. The market gardeners, however, are interested in this project, and it is expected that, with their co-operation, the work may speedily become organized on an entirely satisfactory basis.

The results of the farming operations in 1917 have put the soil in good condition and resulted in the practical extermination of witch grass. While the land will not be in ideal condition for all garden crops in 1918, much more can be done with it than during the past season. Plans are under way to carry on several demonstrations, which should be of immediate value to vegetable growers in Massachusetts, and to start several experiments of fundamental importance to this type of Massachusetts agriculture.

### **The Extension Service.**

The war has brought many changes in the personnel and the work of the extension service, and these began long before war was declared. Every effort has been made to meet the ever-changing conditions that have confronted us. The work developed so rapidly and the changes came so fast that it was very hard to do things in as substantial a way as might have been desired. In reviewing the year's work, however, we feel that in the main the work was well done, and that every worker did as well as possible under the conditions.

*Changes in Staff.* — Both permanent and temporary changes have been made in our staff in the past year. Director Hurd, who is on leave of absence until next July, is serving in Washington as special assistant in the office of the Secretary of Agriculture. Prof. Austin D. Kilham is serving very acceptably as acting director. The assistant director resigned early in the year and his place was taken by an assistant to the director. Four members of our staff have been granted leave of absence



to enable them to do war work. Capable extension workers are becoming very scarce, and it is becoming more and more difficult to fill either temporary or permanent positions.

*Co-operation with Other Agencies.* — During the past year very pleasing co-operative relationships have been maintained with all of the organizations mentioned in the annual report of last year. The most noteworthy additions to this list are the Massachusetts Committee on Public Safety and the State Food Administration with their subordinate committees. Immediately upon the formation of the committee on food production and conservation of the Massachusetts Committee on Public Safety, the extension service as a part of the college was placed at the disposal of the committee. Every member of the extension service helped the work of the committee in some way. A few members of the extension service devoted several months of their time entirely to the work with the Committee on Public Safety. The relationships have been most pleasing and gratifying.

There is now time to work out the relationships and methods of work for 1918 more carefully than was possible last year.

*Co-operative Work with the United States Department of Agriculture.* — Relationships with the United States Department of Agriculture have been strengthened. Several new co-operative projects have been undertaken with the Department. Many of these projects are temporary in character because they are maintained on emergency funds which may not be available after June 30, 1918. New projects are: (1) urban emergency home demonstration work; (2) rural emergency home demonstration work; (3) emergency county agricultural agent work; (4) emergency junior extension work; (5) truck crops disease work; (6) soft cheese demonstration work; (7) sheep production.

*County Agent Work.* — There is now completed the skeleton organization of the farm bureau work, as every agricultural county of the State now has its farm bureau organization. The farm bureaus in Middlesex, Dukes and Nantucket counties have been organized in the past year. The Middlesex County farm bureau has a staff consisting of a secretary, a county agricultural agent, a home demonstration agent and a boys' and

girls' club worker. The Dukes and Nantucket farm bureaus have joined to employ two workers, — a county agricultural agent and a home demonstration agent. The organizations and the preliminary work of the farm bureaus in Dukes and Nantucket were materially aided by the Massachusetts Committee on Public Safety.

Practically all of the farm bureaus have been strengthened by the additions of permanent or emergency workers. The Massachusetts Committee on Public Safety helped at a time during the summer when pressure was urgent and when funds could not be obtained elsewhere, by furnishing funds to carry on temporary work. Soon after the emergency funds of the United States Department of Agriculture became available, in August, some of this support was dropped. A very important portion of the county agent work is still supported by the Massachusetts Committee on Public Safety.

The development of local leadership, both for adult and junior extension work, was a very important part of the year's work in most counties.

The regular projects were followed during the early part of the year. Emphasis was placed on the organization of the dairy industry until that situation was relieved by the organization of the New England Milk Producers' Association. Later, the county agents assisted with the special survey on the cost of milk production.

Early in March came the call for assistance in a nation-wide campaign for increased food production. The regular projects of the farm bureaus were suspended and a large part of the time of our county workers was devoted to special work. The organization of the town committees on public safety and food production necessitated some quick and exacting work on the part of the county agents and others to arrange matters satisfactorily and without friction.

Four emergency agricultural agents at large have been employed under a co-operative agreement with the United States Department of Agriculture and the State Food Administration. These special agents work in close co-operation with the regular county agents on marketing problems. They have been placed in the following districts: —

District 1, Essex and Middlesex counties.

District 2, Barnstable, Plymouth, Bristol and Norfolk counties.

District 3, Worcester County.

District 4, Berkshire, Franklin, Hampden and Hampshire counties.

Agents are now at work in all districts except District 2.

*Rural Home Economics.* — The regular rural home economics work has been speeded up in an endeavor to meet the present emergency. Early in the year three emergency workers were employed throughout the State. The work was somewhat disorganized by the absence of Miss Comstock during the summer, and the loss of Miss Sayles after the 1st of October.

Upon the passage of the emergency food bill the three temporary workers were placed on United States Department of Agriculture funds, and were made assistants to Miss Comstock as State leader of rural home demonstration work.

The organization of the county home demonstration work now takes the greater part of the State leader's time. With the emergency work that is now on, it is not possible for all of the organization work to be done. It is highly important, with the development of home demonstration work in the farm bureaus, that we obtain high-class specialists to work in various lines. A specialist is needed in sewing and one in household management.

*Urban Home Demonstration Work.* — Immediately upon the passage of this bill Miss Antoinette Roof was appointed State leader of home demonstration agents urban. Three assistants were also appointed. Two difficulties at once presented themselves — first, to find properly qualified city leaders; second, to secure co-operation and financial support in the various cities. More than 50 candidates were interviewed to secure the present force of 17 workers. Of this number, 2 are assistants to the State leader, 11 are city leaders, and 3 are assistant city leaders. The fact that 11 cities have been found in so short a time that are willing to give financial aid to this work indicates that there is a real demand for it. Special attention has been given to the organization of the work in each city. In most cases an executive committee has been appointed for each city, with local committees in each district. The city leader finds many organizations with which to co-operate, and



in most cases finds many volunteer leaders who have had training in home economics or who have special qualifications because of their nationality.

The organization of the work in the cities should be strengthened and better co-operation secured with all existing agencies. Better financial arrangements will have to be made if the work is to be permanent. Extension schools should be held to train local leaders.

*Junior Extension Work.* — After the appointment of the Public Safety Committee in the early spring, work was begun to interest the young people in food production and conservation through the agency of public meetings, lectures at schools and school organizations. Four workers were employed permanently, and at certain times, when increased pressure demanded a greater force, the number was increased to eight. The Massachusetts Public Safety Committee financed a large part of the additional work. After the passage of the emergency agricultural bill an assistant State leader was appointed. This made a permanent staff at the college of five members, consisting of a State leader, an assistant State leader, a pig club agent, a poultry club agent and a home economics and canning agent. Since Dec. 1, 1916, approximately 58,664 people have attended demonstrations and meetings held in connection with their work. During the past year emphasis has been especially placed upon organization. Effort has been made to work through the county farm bureaus as far as possible. In a majority of the counties club workers were employed for the first time. These county workers endeavored to find local leaders in the various communities who would take charge of the work in smaller groups. In Hampden County 18 of the 20 towns appropriated money for local leadership as a result of the effort of the county club leader. In Franklin and Hampshire counties several towns at their annual meeting appropriated money for this work. In many cities the school departments appropriated money for club work. In most cases this money was used to pay the salary of a supervisor or a supervisor and assistants. Our records show that there have been at least 230 paid local leaders and 240 volunteer local leaders who have conducted work during the past year.

At the suggestion of the Norfolk County agricultural agent a new form of work is being tried out under the direction of the assistant State leader. Junior extension schools are being developed in which it is hoped that a larger amount of thorough instruction will be given than has been possible in the past.

Boys and girls in many instances did canning work in units. As many as 3,500 jars were canned by some of these groups, and several records were made by individual boys and girls who canned from 500 to 800 jars of fruits, vegetables and greens. The figures at hand show great increase in interest, not only on the part of the children but also adults.

*Special Extension Schools.* — As a part of the emergency work three four-day training schools for leaders were held at the college July 10 to 13, 17 to 20, 24 to 27, to which 83 persons came, representing 45 towns in the State. Five instructors conducted these meetings. Food conservation schools of one and two days' length were held May 24 to August 22 in 85 communities throughout the State. Five of these covered a period of two days, while the remainder were one-day sessions.

Aside from these well-recognized projects, 49 members of the college staff, experiment station and extension service delivered 897 lectures before various organizations and communities at which there was an estimated attendance of 58,305.

*Horticultural Manufactures.* — Previous to 1917 this very important line of work was carried on in a very meager way under the pomology extension project. Early in the present year Professor Chenoweth developed this as part of the campus mobilization work. Material aid was given to community canning and evaporating centers. Schools were held for leaders at the college, and schools and lectures were given throughout the State. Plans are under way to carry this work on in a very practical way during the next year.

*Special Campaigns.* — In order to meet the unusual situations the past year several special campaigns were carried on. Among the most successful was the poultry campaign which was developed by our poultry department in co-operation with the Massachusetts Committee on Public Safety and several other organizations. Reports indicate that these campaigns have been very successful.

*Summary of Recommendations.* — The results of the extension work showed very clearly during the past year that the extension staff, including the county agricultural agents, has been ready to meet emergencies. It has also been shown that it is very inadvisable to take the men off their regular lines of work to do a large amount of special work, even in so great an emergency as last year. Each of our workers is developing a special project which is just as important in time of war as in time of peace. Material harm was done to some of our permanent projects by the emergency work last year. It would seem advisable, therefore, to increase the staff, so far as possible, to meet the emergency rather than to take our specialists away from their regular and important work.

Budgets which will soon be presented will indicate the needs for the coming year in regular work and for emergency work. Special mention is made by the acting director of the following: —

1. More help should be obtained from the United States Department of Agriculture in correlation of our work both with the Department and with the farm bureaus.

2. More money should be obtained from the State treasury to be used through us by the county farm bureaus.

3. The rural home economics work should be better developed, to include, in addition to the State leader, highly trained specialists in food, clothing and household management.

4. Appropriation should be made for the maintenance of the urban home economics work.

5. Well-trained men should be secured to work out better methods for our itinerant instruction. This should be done whether the man is called assistant director or a specialist in this work. It may be advisable to reorganize our present scheme and place the administrative work along these lines in the hands of one of our present force, but it is very necessary that we have a man who is really a specialist on itinerant instruction. This is very important.

6. More money should be given us for printing and publicity. A great deal more could be done in this line.

7. Correspondence course work should be further developed. This cannot be done until further funds are secured.



8. Library extension work should be developed. This will require a part-time worker.

9. This seems to be the time to do some rapid work in community and county organization.

10. Plans should be made to carry on the present co-operative organization and marketing work in case the United States Department of Agriculture funds are not available after June 30.

11. The specialist in pomology should devote practically all his time to the demonstration orchards. Other work should only be done when it is possible to secure another worker.

12. There should be a full-time worker in dairying.

13. Civic improvement work should be dropped until the end of the war.

Most of the college teachers have responded to the call and given a great deal of their time and attention to the work off the college grounds as well as to special work on the campus. We expect a similar response another year. The extension staff, including the clerical force, has met the many unusual situations of the past year in a fine spirit of service.

## THE IMMEDIATE NEEDS OF THE COLLEGE.

### LEGISLATIVE BUDGET, 1918.

Because of the abnormally high cost of building materials and of labor, and also because both of these are in such demand for the more adequate prosecution of the war, the trustees at their October meeting decided not to ask the forthcoming Legislature for appropriations for any new buildings, although the need for the library, armory, chemistry laboratory and the dormitory is as urgent as ever. There are, however, several miscellaneous projects for improvements and equipment which have been pressing for some years, many of which are absolutely essential for the most efficient conduct of our work at this time. After careful consideration of these projects the trustees have prepared a budget which includes the following items: —

Improvements at the power plant, including coal-handling apparatus, turbine house and equipment, and residence for engineer, . . . . .	\$59,700
Improvements at dining hall, . . . . .	12,000
Poultry buildings, . . . . .	7,500
Potting shed and bulb cellar at greenhouses, . . . . .	6,659
Miscellaneous improvements in buildings and grounds, . . . . .	30,306
Miscellaneous teaching, operating and office equipment, . . . . .	20,680
	<hr/>
	\$136,845
Buildings, equipment and maintenance of market-garden field station at Lexington: —	
Greenhouses and heating plant, . . . . .	\$13,500
Foreman's cottage, . . . . .	4,500
Administration building, . . . . .	7,500
Maintenance, . . . . .	3,000
	<hr/>
	\$28,500

Following is a brief explanation of the need for the appropriation requested: —

#### *Improvements at the Power Plant, \$59,700.*

The equipment for furnishing electricity for the institution is inadequate for the present demand. There is now in use one 100-kilowatt Curtis General Electric turbine, and one

50-kilowatt Terry generator. The institution is now using in excess of 400 kilowatts. We are asking, therefore, for an additional 300-kilowatt Curtis turbine and exciter, to cost \$9,000. The following equipment will be necessary for this turbine: switchboard, \$3,200; piping, valves, fittings and labor to connect turbine house machines with the boiler house, \$5,000; a 5-ton crane for turbine house, \$1,000; moving old machines to the turbine house, and connecting switchboard with old electrical lines, \$1,000; the cost of the new turbine house to care for this equipment is estimated at \$14,000.

For economy in operation we desire to install additional coal-handling apparatus to cost \$22,000; this equipment will make possible a saving of 75 per cent. of the cost of labor of handling coal.

At the present time the chief engineer lives over a half a mile away from the power plant. Without question it is desirable, if not imperative, that the engineer should live near the plant. We are, accordingly, requesting an appropriation of \$4,500 to provide a suitable house for the engineer, to be located close to the power plant.

*Improvements at the Dining Hall, \$12,000.*

This appropriation has been asked for in previous years, and the need is now even greater than formerly. The amount specified would be used for installing suitable toilet facilities in the basement; for constructing a cold-storage plant for potatoes and other vegetables; and also to provide adequate storage for the coal used for cooking purposes. In addition to the cold-storage plant for vegetables a complete refrigeration plant is required, furnishing separate compartments for meat, milk, butter, fruit, eggs and miscellaneous left-over foods.

*Poultry Building, \$7,500.*

The poultry department is inadequately equipped with buildings necessary for the proper conduct of its teaching and investigational work. This is due in part to the fact that the department has been established only a comparatively short time, and the equipment has been added gradually. The present request is for funds to provide a poultry house for



stock and for use as a laboratory. The building proposed will contain twenty-four pens, a laboratory for general demonstrations, and a large room on the second floor to accommodate 25 to 50 students.

*Potting Shed and Bulb Cellar at the Greenhouses, \$6,659.*

In order to facilitate the work of the department of floriculture we propose to build a potting shed and manure tanks. The potting shed will have a basement for bulb storage.

*Miscellaneous Improvements and Equipment, \$50,986.*

Each year we are obliged to seek an appropriation for miscellaneous improvements in buildings and grounds, and for miscellaneous teaching, operating and office equipment. Inasmuch as our requirements are never met by the Legislature, the list of improvements and equipment presented this year is, therefore, somewhat of an accumulation of needs of long standing. The total of projects approved by the trustees is indicated by the above figures, divided as follows: improvements, \$30,306; equipment, \$20,680.

*Equipment, Improvements and Maintenance at the Market-garden Field Station, \$28,500.*

In order properly to develop the work of the market-garden field station at Lexington additional buildings and equipment are necessary, and the appropriation for maintenance must be renewed. The estimated gross expense for maintenance is \$3,000 to Dec. 1, 1918. An appropriation of \$7,500 is asked for an administration building to provide offices, storage for records, a small laboratory to take care of the work which must be done immediately on the grounds, a committee room, a dark room for photographic work, accommodations for the heating plant for the administration and service buildings and the foreman's cottage. The sum of \$4,500 is requested for the construction of a cottage for the resident foreman. An appropriation for greenhouses and heating plant was asked for last year, but not granted. This request is renewed at \$13,500; this will provide four greenhouses, each 40 by 75 feet, and a heating plant to care for the same.

## GENERAL FINANCIAL NEEDS.

The five years' appropriation for maintenance of the college granted in 1913 expires Nov. 30, 1918, unless renewed. The commission to investigate the college will soon make its report, and our action as a Board will have to be governed to a large extent by the character of the recommendations of this commission relative to financial support of the institution. At this time, therefore, I cannot make specific suggestions, and can only reiterate the statements and arguments attempted in my report of one year ago, relative to the general question of method of supporting the institution.

Your Board of Trustees have agreed that it was unwise to ask for large buildings at this time, partly because the resources of the State are taxed to an unusual degree on account of the war, and partly because the excessive cost of building materials seems to make the erection of expensive buildings at this time rather unwise.

The question of financial support for the coming year is, however, somewhat acute. In spite of the reduced attendance of students, the cost of maintenance of the institution is not greatly reduced. Wherever it has been possible to carry on the work persons have not been appointed to vacancies made by resignations due to war work or other causes. This policy will to some degree reduce the salary pay roll. On the other hand, the very rapid increase in the cost of living during the past two years raises an exceedingly important question relative to the salaries of members of the staff. This question is peculiarly important in the cases of those members of the staff who are receiving moderate incomes, both in teaching and in experimental work, and perhaps presses, if possible, with even greater force upon the clerical staff, who, in my judgment, are not sufficiently paid anyway. I am inclined to think that it would be wise, as it certainly would be only fair, to grant a bonus or temporary increase of salary to certain members of the staff for the coming fiscal year.

The treasurer thinks that coal will be higher rather than lower. We are doing all in our power to reduce the consumption of coal, but the gain here is more than offset by the

extra cost of coal. Labor, of course, is high, as well as supplies, so that the maintenance cost of the institution, even under reduced sail, is not materially lessened.

Moreover, there are good reasons why certain emergency enterprises should be undertaken. During the past year the college spent at least \$8,000 — entirely apart from any question of salaries or services of men — in travel, correspondence, publications and clerical help — work that was entirely abnormal and wholly war emergency service. This type of expense is bound to continue so long as the war lasts.

Furthermore, I believe it to be the duty of the institution to do everything in its power to contribute to the problem of food supply. There are certain investigations that ought to be made. There are certain phases of expert service that we cannot render because we have no men on the staff to do the work, so that we could spend considerably more money in our extension service while the war is on. One of the most important aspects of war service that could be rendered would be to establish on a sound foundation our new department of horticultural manufactures. This has such an intimate relation to the saving of wastes, the canning, drying and preserving of foods, the rendering of unsalable but clean product into a multiform variety of juices, jellies, etc., that it could make a contribution of utmost consequence at this time.

#### WOMEN AT THE MASSACHUSETTS AGRICULTURAL COLLEGE.

Women were first admitted to the Agricultural College for college grade work in 1899. Since that date there have always been a few in attendance for degree courses, and, including the class of 1917, 10 women have received the diploma of the institution. Of course, during all these years many women have attended the winter short course, and the summer school attendance has been composed largely of women. There was never any prohibition of women attending the college, and so far as I can discover there has been no real prejudice against it, at least in recent years. Neither from students nor from faculty have I heard of serious objection to the attendance of women. On the other hand, no encouragement has been given women to attend. There has been no special provision for their housing



nor for their college life and activities. There are several reasons why it seems necessary at this time to give special attention to this phase of our work.

1. There has been a notable recent increase in the enrollment of women. During the collegiate year 1912-13 there were 5 women here; last year there were 25; this year there are 30 women, 6 of these being freshmen.

2. The Massachusetts Agricultural College is the only land-grant college in New England, and I think I am correct in saying the only one in the north, that does not have special courses and provision for women. This fact is not necessarily conclusive as to our own policy; it does, however, indicate that we stand alone in the policy, and consequently must justify it if it is to be maintained.

3. The development of woman's interest in agriculture is rather notable. The number of women farmers in the east seems to be increasing. The organization of women interested in agriculture, started some years ago, has been fostered by the war and has become a strong movement. The mere fact that girls are taking courses in agriculture, short and long, in rapidly increasing numbers, is of utmost significance. It is worth noting that before the war European as well as British agricultural educational systems were providing increasingly for women.

4. The emphasis upon the importance of food thrift in this war has increased immeasurably the need of providing for the education of women in certain lines of endeavor for which there is now wholly inadequate preparation. Questions as to the use of food, the saving of food, the preserving of food — to a large extent matters in charge of women — raise nothing less than an issue.

5. There is a fundamental reason why an agricultural college should provide courses for women. For fifty years we have been endeavoring, through research and teaching and extension service, to enable the farmer to make more money from his farm. As already noted, many of the land-grant colleges have courses in home economics. It is doubtful, however, if any college has yet adequately provided for the training of women for rural home making in the same sense that they have

attempted to train the men for farm making. But however that may be, and whatever may be the difficulties in the way of carrying out such an ideal, the fact remains that the whole field of rural home making needs to be developed, and can be developed adequately only in the atmosphere of an agricultural college.

6. There is a growing demand for the training of women for positions in social service in connection with country life. While the normal schools are training teachers for the rural towns, still some aspects of this training can better be carried on at an agricultural college than anywhere else. We already have calls for community nurses, for directors of recreation and for Y. W. C. A. secretaries in the country. These calls are likely to increase, and they need trained women.

### *Some Considerations.*

1. This plea for the recognition of women raises at once the question as to whether the college should enter upon a scheme of coeducation. Personally, I am convinced that this question is largely one of habit. The men's colleges of the east and south are very loath to change their policy and admit women, and I think the women's colleges of the east rather pride themselves in their plan of segregating women. On the other hand, the State colleges and universities of the north have practically always been coeducational. So far as I can discover there is no tendency to change their policy. I have come to feel that the best plan for a college situated as we are, and with its history and practice, would be to develop work for women in a way that would combine in a measure the advantages of both plans. I think, in other words, we should have on the campus what would virtually be an affiliated institution where the women would be considerably segregated, and would in large measure have their own teachers, their own buildings and their own social life. At the same time, there would be no artificial barriers of isolation. Mixed classes would prevail wherever they were economical, separate classes wherever the numbers warranted. So far as practicable, all the resources of classroom, laboratory equipment and teaching force now available for the men would be made available for

the women. There would be no duplication. There would, however, be an institutional *esprit de corps*.

2. I do not think that the policy of the college should be to inaugurate a course designed chiefly to prepare teachers of home economics. Opportunities for this sort of training are already in existence. Probably graduates of the college would enter this field, but I should think it wise to build the whole course on the idea that this outcome would be only an incident.

3. If work for women is started it ought to include at the outset some provision for investigational work. So far as food is concerned this would be partially taken care of in existing departments of the institution. But, of course, there is a vast field to be explored in lines that are of specific interest to the education of women.

4. We have for a number of years maintained effective work in the Extension Service in relation to home economics and other interests of women. This work, of course, should correlate intimately with the campus work of teaching and investigation, and should in itself be enlarged in scope and amount.

5. I have no set notions relative to the course of study that should be provided. This should be worked out by competent women on the ground. In general, however, I think the work should have for its backbone the vocational element; that it should at the same time give a large measure of attention to the humanistic or cultural subjects; and that it should also insist upon a proportion of work leading the students to an understanding of the relation of women, both as home makers and as citizens, to the needs of the community, to the State and to the nation. In other words, we should follow with the women practically the same principles of course building that we follow with the men.

#### *Equipment.*

The immediate requirements for starting this work for women would be the employment of a director of women's work, and probably at least two additional teachers. There should be provided quarters for administration and teaching. These may not be very extensive at first, but we have at present absolutely no place for even office room for such members of



our faculty. As soon as possible, a women's dormitory should be erected.

I speak of these as important necessities. I do not see that we can hope for any adequate development of this work unless these minimum needs are met. Once we have the nucleus of a working corps and a place for them to work in, we will then develop adequate plans for the building of an institution as rapidly as demands are made upon us.

*The Time is Opportune.*

I believe that we should not longer delay the inauguration of this type of work. The students are coming to us, the percentage of attendance increasing very rapidly in spite of the fact that we offer no special encouragement. Moreover, this very war emergency that is reducing our attendance of men increases the call for special work for women. Particularly in relation to the food question as a practical contribution to the war, both in production and in conservation, we find the need for educational work.

*Recommendation.*

I therefore recommend that we ask the Legislature for \$30,000 to be available from July 1, 1918, to June 30, 1920, for salaries and maintenance of a woman's department; also the appropriation of \$70,000 for an administration building, the money to be available and the contract let when the Governor and Council have approved plans and specifications for the building and consented to its erection.

## TABLES AND STATISTICS.

TABLE I. — *Resignations.*

POSITION.	Name.
Clerk, division of horticulture, . . . . .	Eleanor Barker.
Assistant in veterinary science, . . . . .	C. Theodore Buchholz.
Inventory clerk, treasurer's office, . . . . .	Maude B. Chambers.
Stenographer, junior extension, . . . . .	Doris Clark.
Instructor in dairying, . . . . .	Samuel Coons.
Clerk, department of poultry husbandry, . . . . .	Marcella P. Curry.
Telephone operator, Stockbridge Hall, . . . . .	Louise G. Davidson.
Stenographer, department of dairying, . . . . .	Katherine L. Fenton.
Professor of military science and tactics, . . . . .	Henry W. Fleet.
Supervisor of correspondence courses, . . . . .	Erwin H. Forbush.
Clerk, department of beekeeping, . . . . .	Marion Guertin.
Bookkeeper, treasurer's office, . . . . .	Alice E. Gustafson.
Instructor in French, . . . . .	William L. Harmount. <sup>1</sup>
Stenographer, extension service, . . . . .	Helena Keiber.
Instructor in botany, . . . . .	George W. Martin.
Stenographer, department of entomology, . . . . .	Helen A. Martin.
Stenographer, division of rural social science, . . . . .	Nell C. Milton.
Extension instructor in agricultural education, . . . . .	Ethel H. Nash.
Associate professor of floriculture, . . . . .	Arno H. Nehrling.
Curator, department of botany, . . . . .	Grace B. Nutting.
Assistant in English, . . . . .	Philip W. Payne.
Assistant professor of animal husbandry, . . . . .	Elvin L. Quaife.
Library assistant, . . . . .	Vivian L. Roy.
Instructor in poultry husbandry, . . . . .	Everett H. Rucker.
Instructor in agricultural economics, . . . . .	Ralph M. Rutledge.
Bookkeeper, treasurer's office, . . . . .	Edna M. Sanders.
Assistant to director of extension service, . . . . .	Bernard W. Shaper.
Stenographer, extension service, . . . . .	Elsa Slattery.
Assistant to the commandant, . . . . .	Alexander Smart.
Assistant in physics, . . . . .	Harry C. Thompson.
Associate professor of microbiology, . . . . .	F. H. H. VanSuchtelen.
Assistant director, extension service, . . . . .	Earnest D. Waid.
First clerk, treasurer's office, . . . . .	Henrietta L. Webster.
Assistant professor of horticulture, . . . . .	John T. Wheeler. <sup>2</sup>

<sup>1</sup> Deceased.<sup>2</sup> Effective Dec. 15, 1917.

TABLE II. — *New Appointments.**A. In the Academic Departments.*

POSITION.	Name.	Institution from which graduated and Degrees.
Associate professor of agronomy, .	Arthur B. Beaumont, .	B.Sc., Kentucky State University, 1908.
Assistant professor of floriculture, .	August G. Hecht, .	B.Sc., University of Illinois, 1914.
Instructor in microbiology, . . .	Egerton G. Hood, .	B.S.A., Toronto University, 1913.
Assistant professor of animal husbandry.	Byron E. Pontius, .	B.Sc., Ohio State University, 1914.
Instructor in poultry husbandry, .	Lloyd L. Stewart, .	B.Sc., Purdue University, 1915.
Instructor in dairying, . . .	Stanley E. VanHorn, .	- - -
Instructor in agricultural economics,	Otto F. Wilkinson, .	B.A., Ohio State University, 1914; M.A., Ohio State University, 1915.
Professor of military science and tactics.	Richard H. Wilson, .	United States Military Academy, West Point.

*B. In the Experiment Station.*

Assistant in veterinary science, .	C. Theodore Buchholz, .	V.M.D., University of Pennsylvania, 1917.
Assistant in agricultural economics, .	Samuel H. DeVault, .	A.B., Carson-Newman College, 1912; A.M., University of North Carolina, 1915.
Field pathologist, department of botany.	Webster S. Krout, .	B.Sc. and M.A., Ohio State University, 1915.
Assistant chemist, . . . .	Bernard L. Peables, <sup>1</sup>	B.Sc., Bates College, 1917.
Assistant in entomology, . . . .	Stuart C. Vinal, .	B.Sc., Massachusetts Agricultural College, 1915; M.Sc., Massachusetts Agricultural College, 1917.

*C. In the Extension Service.*

Supervisor of correspondence courses and editor of extension service publications.	L. Wayne Army, .	B.Sc., Pennsylvania State College, 1910.
Instructor in charge of poultry club work.	A. Lawrence Dean, <sup>1</sup>	- - -
Instructor in agricultural education,	Helen M. Norris, .	Framingham Normal School.
Instructor in charge of pig club work,	Victor A. Rice, .	B.Sc., N. C. A. and E. College, 1917.
Instructor in pomology, . . . .	Ralph A. VanMeter, <sup>1</sup>	B.Sc. Agr., Ohio State University, 1917.
Assistant to the director, . . . .	Bernard W. Shaper, .	B.Sc., Cornell University, 1914.

<sup>1</sup> Temporary appointment.



TABLE II. *New Appointments — Concluded.**D. In the Clerical Staff.*

POSITION.	Name.
Clerk, extension service, . . . . .	Ella B. Baldwin.
Stenographer, Division of rural social science, . . . . .	Bertha E. Connelly.
Telephone operator, Stockbridge Hall, . . . . .	Emily Davidson.
Clerk, power plant, . . . . .	Noella Duval.
Stenographer, extension service, . . . . .	Margaret Evens.
Curator, department of botany, . . . . .	Mae F. Holden.
Mailing clerk, extension service, . . . . .	Clarence A. Kendall.
Clerk, treasurer's office, . . . . .	Marion E. Kelsey.
Clerk, department of poultry husbandry, . . . . .	Rachael G. Leslie.
Clerk, department of poultry husbandry, . . . . .	Grace MacMullen.
Library assistant, . . . . .	Marion Norton.
Stenographer, division of horticulture, . . . . .	Hazel Parker.
Stenographer, department of dairying, . . . . .	Frances Powers.
Clerk, department of beekeeping, . . . . .	Edith Robinson.
Clerk, treasurer's office, . . . . .	Elizabeth Strachan.

TABLE III. — *Change in Title of Officers of the Institution.*

NAME.	Former Title.	Present Title.
Eleanor Bishop, . . .	Clerk, treasurer's office, . . .	Bookkeeper, treasurer's office.
Wesley H. Bronson, . .	Extension instructor in farm demonstration.	Extension assistant professor of farm demonstration.
F. Ethel Felton, . . .	Clerk, experiment station, . . .	Clerk and editorial assistant experiment station.
Clarence E. Gordon, . .	Associate professor of zoölogy and geology.	Professor of zoölogy and geology.
Harold M. Gore, . . .	Instructor in physical education,	Assistant professor of physical education.
Arao Itano, . . . . .	Instructor in microbiology, . .	Assistant professor of microbiology.
Austin D. Kilham, . . .	Extension instructor in pomology.	Extension assistant professor of pomology.
Alfred G. Lunn, . . . .	Extension instructor in poultry husbandry.	Extension professor of poultry husbandry.
Frederick G. Merkle, . .	Assistant in agronomy, . . . .	Instructor in agronomy.
Marie Sayles, . . . . .	Extension instructor in home economics.	Extension assistant professor of home economics.
F. A. Cushing Smith, . .	Extension instructor in civic improvement.	Extension assistant professor of landscape gardening.
Ethelyn Streeter, . . .	Stenographer, division of horticulture.	Clerk, division of horticulture.
William F. Turner, . . .	Extension instructor in animal husbandry.	Extension assistant professor of animal husbandry.

TABLE IV. — *Leaves of Absence.*

POSITION.	Name.	Cause of Leave.
Assistant chemist, experiment station.	Windom A. Allen, .	War service.
Professor of general and physical chemistry.	Ernest Anderson, .	One year, from Sept. 1, 1917; at Transvaal University, South Africa.
Extension assistant professor of farm demonstration.	Wesley H. Bronson, .	War service.
Professor of forestry, . . .	William D. Clark, .	With State Fuel Administrator.
Assistant in physical education, .	Llewelyn L. Derby, .	War service from Dec. 8, 1917.
Head of division of agriculture and professor of farm administration.	James A. Foord, .	One year, from Jan. 15, 1917; sabbatical leave.
Assistant professor of physical education.	Harold M. Gore, .	War service.
Field agent, . . . . .	Charles H. Gould, .	With Hampshire County Farm Bureau.
Professor of agricultural education,	William R. Hart, .	Six months, from April 1, 1917; sabbatical leave.
Instructor in mathematics, . .	Burt A. Hazeltine, .	War service.
Extension instructor in charge of poultry club work.	Roswell W. Henninger, .	War service.
Director of extension service and supervisor of short courses.	William D. Hurd, .	Ten months from Nov. 1, 1917; sabbatical leave.
Assistant in veterinary science, experiment station.	John B. Lentz, .	War service.
Assistant professor of mathematics,	William L. Machmer, .	Work with the United States Department of Agriculture.
Extension assistant professor of home economics.	Marie Sayles, .	Work with United States Department of Agriculture.
Assistant chemist, experiment station.	Robert S. Scull, .	Chemical work with government.
Assistant chemist, experiment station.	John B. Smith, .	War service.
Head of division of horticulture and professor of landscape gardening.	Frank A. Waugh, .	Six months, from April 1, 1917; sabbatical leave.
Extension assistant professor of landscape gardening.	F. A. Cushing Smith, .	War service from Jan. 1, 1918.

TABLE V. — *Speakers for the Year.**A. Speakers at Wednesday Assembly for Year ending Nov. 30, 1917.***1916.**

Dec. 6. — Hon. George D. Chamberlain, Springfield, Mass.

Dec. 13. — Mr. Charles H. Gould, M. A. C.

**1917.**

Jan. 3. — Prof. Curry S. Hicks, M. A. C.

Jan. 10. — Mr. William C. Langdon, New York City.

Jan. 17. — Dr. W. D. Weatherford, International Y. M. C. A., Nashville, Tenn.

Jan. 24. — Pres. Kenyon L. Butterfield.

Jan. 31. — Mr. Denis A. McCarthy, Boston, Mass.

Feb. 7. — Pres. Kenyon L. Butterfield.

Feb. 14. — Mr. Joseph Novitski, M. A. C.

Feb. 21. — Hon. Marcus M. Marks, New York City.

Feb. 28. — Mr. Ralph S. Bauer, Lynn, Mass.

Mar. 7. — Capt. Henry W. Fleet, M. A. C.

Mar. 14. — Mr. George L. Farley, M. A. C.

Apr. 4. — Preparedness program: Judge Michael J. Murray, Boston, Mass.; Mr. Herbert S. Carruth, Amherst, Mass.; Mr. David H. Buttrick, M. A. C., 1917.

Apr. 11. — Prof. John T. Wheeler, M. A. C.

Apr. 18. — Prof. Robert Frost, Amherst College, Amherst, Mass.

TABLE V. — *Speakers for the Year — Concluded.**A. Speakers at Wednesday Assembly for Year ending Nov. 30, 1917 — Concluded.***1917.**

- Apr. 25. — Pres. Kenyon L. Butterfield.  
 Oct. 24. — Prof. George G. Wilson, Harvard University, Cambridge, Mass.  
 Oct. 31. — Dr. Kokichi Morimoto, Johns Hopkins University, Baltimore, Md.  
 Nov. 7. — Student forum.  
 Nov. 14. — Mr. D. Brewer Eddy, Boston, Mass.  
 Nov. 21. — Dr. Harvey W. Wiley, Washington, D. C.

*B. Speakers at Sunday Chapel for Year ending Nov. 30, 1917.***1916.**

- Dec. 3. — Bishop Thomas F. Davies, Springfield, Mass.  
 Dec. 10. — Rev. Albert C. Knudson, Boston, Mass.  
 Dec. 17. — Mr. Daniel A. Poling, Boston, Mass.

**1917.**

- Jan. 7. — Mr. Charles Stelzle, New York City.  
 Jan. 14. — Pres. John M. Thomas, Middlebury College, Middlebury, Vt.  
 Jan. 21. — Dr. Sidney E. Goldstein, New York City.  
 Jan. 28. — Rev. Philip S. Schenck, Framingham, Mass.  
 Feb. 4. — Rev. F. H. Decker, Providence, R. I.  
 Feb. 11. — Rev. Abraham M. Rihbany, Boston, Mass.  
 Feb. 18. — Rev. Archibald Black, Concord, N. H.  
 Feb. 25. — Rev. Daniel A. Evens, Cambridge, Mass.  
 Mar. 4. — Bishop Edwin H. Hughes, Boston, Mass.  
 Mar. 11. — Mr. Owen R. Lovejoy, New York City.  
 Mar. 18. — Pres. W. H. P. Faunce, Brown University, Providence, R. I.  
 Apr. 8. — Mr. Thomas Mott Osborne, Auburn, N. Y.  
 Apr. 15. — Rev. Harold Marshall, Melrose, Mass.  
 Apr. 22. — Dr. Ernest Abbott, New York City.  
 Apr. 29. — Rev. Nehemiah Boynton, Brooklyn, N. Y.

TABLE VI. — *Attendance.**A. In Work of College Grade.*

	Registration Nov. 30, 1916.	Registration Nov. 30, 1917.
Senior class, . . . . .	104	64
Junior class, . . . . .	138	113
Sophomore class, . . . . .	174	117
Freshman class, . . . . .	159	108
Probationary freshmen, . . . . .	11	10
	586	412
Graduate students, . . . . .	57	29
Unclassified students, . . . . .	29	50
Vocational poultry students, . . . . .	8	5
Special students, . . . . .	—	4
	680	500



TABLE VI. — *Attendance — Concluded.**B. Short-course Enrollment and Convention Registration.*

	1916.	1917.
Winter school, . . . . .	153	110
Farmers' week, . . . . .	980	800
Beekeepers' school, . . . . .	10	50
Polish farmers' day, . . . . .	220	300
Apple packing school, . . . . .	8	-
County agents' conference, . . . . .	55	120
Bankers' conference, . . . . .	23	-
Summer school of agriculture and country life, . . . . .	170	90
Conference on rural organization, . . . . .	38	121
School for rural social service, . . . . .	35	20
Ministers' conference, . . . . .	-	8
Poultry convention, . . . . .	268	176
Boys' camps, . . . . .	88	102
Girls' camp, . . . . .	27	17
	2,080	1,914

TABLE VII. — *Legislative Budget, 1917.*

ITEMS.	Amount asked.	Amount granted.
Library and equipment, . . . . .	\$250,000	-
Equipment and improvements, . . . . .	75,000	\$33,500
Poultry building, . . . . .	4,200	-
Student dormitory, . . . . .	50,000	-
Dining hall improvements, . . . . .	10,000	-
Rural engineering shops, . . . . .	9,000	-
Power plant, turbine house and steam line tunnels, . . . . .	90,000	40,000
	\$488,200	\$73,500
Buildings, equipment and maintenance for market-garden field station, . . . . .	\$35,000	\$10,000
Emergency appropriation for current expenses, . . . . .	\$25,000	\$17,500

TABLE VIII. — *Statistics of Freshmen entering Massachusetts Agricultural College, October, 1917.**A. Home Addresses of Students (classified by Towns and Cities).*

Amesbury, . . . . .	1	Hopedale, . . . . .	1	Rowley, . . . . .	1
Amherst, . . . . .	7	Jefferson, . . . . .	1	SALEM, . . . . .	1
Arlington, . . . . .	3	Lexington, . . . . .	1	Shelburne, . . . . .	2
ATLANTA, GA., . . . . .	1	LYNN, . . . . .	7	Somerset, . . . . .	1
Bernardston, . . . . .	1	MALDEN, . . . . .	3	SOMERVILLE, . . . . .	4
Bethel, Conn., . . . . .	1	Marshfield, . . . . .	1	South Meriden, Conn., . . . . .	1
BOSTON, . . . . .	8	Maynard, . . . . .	1	SPRINGFIELD, . . . . .	4
BROCKTON, . . . . .	2	Medfield, . . . . .	1	Stoneham, . . . . .	1
Brookline, . . . . .	2	MEDFORD, . . . . .	1	Sturbridge, . . . . .	1
BROOKLYN, N. Y., . . . . .	1	MELROSE, . . . . .	2	Sutton, . . . . .	1
CAMBRIDGE, . . . . .	1	Millis, . . . . .	1	Templeton, . . . . .	1
Charlemont, . . . . .	1	Nampa, Idaho, . . . . .	1	Topsfield, . . . . .	1
Chatham, N. J., . . . . .	1	Natick, . . . . .	1	WASHINGTON, D. C., . . . . .	1
Chester, . . . . .	1	Nedham, . . . . .	2	Webster, . . . . .	1
CHICOPEE, . . . . .	1	NEW BEDFORD, . . . . .	1	Westborough, . . . . .	1
Deerfield, . . . . .	1	NEWPORT, R. I., . . . . .	1	Westfield, . . . . .	1
Easthampton, . . . . .	1	NEW ROCHELLE, N. Y., . . . . .	1	West Haven, Conn., . . . . .	1
Easton, . . . . .	2	NEW YORK CITY, N. Y., . . . . .	1	Weymouth, . . . . .	2
Enfield, . . . . .	1	NORTHAMPTON, . . . . .	1	Whitman, . . . . .	1
FALL RIVER, . . . . .	1	Oakham, . . . . .	1	Williamsburg, . . . . .	1
Far Rockaway, N. J., . . . . .	1	Orange, . . . . .	1	Williamstown, . . . . .	1
FITCHBURG, . . . . .	1	Palmer, . . . . .	1	WILLIMANTIC, CONN., . . . . .	1
Great Barrington, . . . . .	1	PEABODY, . . . . .	3	Winchendon, . . . . .	1
Hadley, . . . . .	2	PROVIDENCE, R. I., . . . . .	1	Winthrop, . . . . .	2
HARTFORD, CONN., . . . . .	1	Reading, . . . . .	1	WORCESTER, . . . . .	2
HAVERHILL, . . . . .	1	Rockland, . . . . .	1		

*B. Home Addresses (classified by States).*

	Number.	Per Cent.		Number.	Per Cent.
Connecticut, . . . . .	5	4.23	New Jersey, . . . . .	2	1.69
District of Columbia, . . . . .	1	.85	New York, . . . . .	3	2.54
Georgia, . . . . .	1	.85	Rhode Island, . . . . .	2	1.69
Idaho, . . . . .	1	.85		118	99.99
Massachusetts, . . . . .	103	87.29			

*C. Home Addresses (classified by Counties of Massachusetts).*

	Number.	Per Cent.		Number.	Per Cent.
Berkshire, . . . . .	2	1.94	Middlesex, . . . . .	19	18.45
Bristol, . . . . .	5	4.85	Norfolk, . . . . .	8	7.77
Essex, . . . . .	15	14.56	Plymouth, . . . . .	5	4.85
Franklin, . . . . .	6	5.83	Suffolk, . . . . .	10	9.71
Hampden, . . . . .	8	7.77	Worcester, . . . . .	12	11.65
Hampshire, . . . . .	13	12.62		103	100.00

TABLE VIII. — *Statistics of Freshmen entering Massachusetts Agricultural College, October, 1917 — Continued.**D. Nativity of Parents.*

	Number.	Per Cent.
Neither parent foreign born, . . . . .	85	72.03
Both parents foreign born, . . . . .	24	20.33
Father (only) foreign born, . . . . .	3	2.54
Mother (only) foreign born, . . . . .	6	5.09
	118	99.99

*E. Education of Father.*

	Number.	Per Cent.
Common school, . . . . .	45	38.13
High school, . . . . .	41	34.75
Business school, . . . . .	13	11.02
College or university, . . . . .	16	13.56
No statistics, . . . . .	3	2.54
	118	100.00

*F. Religious Census.*

	MEMBERSHIP.		PREFERENCE.		TOTALS.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Baptist, . . . . .	7	5.93	5	4.24	12	10.17
Catholic, . . . . .	7	5.93	1	.85	6	6.78
Congregationalist, . . . . .	28	23.73	14	11.86	42	35.59
Episcopal, . . . . .	9	7.63	1	.85	10	8.47
Hebrew, . . . . .	5	4.24	—	—	5	4.24
Methodist, . . . . .	11	9.32	1	.85	12	10.17
Presbyterian, . . . . .	3	2.54	—	—	3	2.54
Unitarian, . . . . .	6	5.09	2	1.70	8	6.78
Universalist, . . . . .	3	2.54	3	2.54	6	5.09
Miscellaneous, . . . . .	6	5.09	5	4.24	11	9.32
No statistics, . . . . .	—	—	—	—	1	.85
	85	72.03	32	27.12	118	100.00



TABLE VIII. — *Statistics of Freshmen entering Massachusetts Agricultural College, October, 1917 — Concluded.**G. Occupation of Father.*

	Number.	Per Cent.
Agriculture and horticulture, . . . . .	24	20.33
Artisans, . . . . .	30	25.42
Business, . . . . .	36	30.51
Deceased or no statistics, . . . . .	8	6.78
Miscellaneous, . . . . .	11	9.32
Professional, . . . . .	9	7.63
	118	99.99

*H. Intended Vocation of Student.*

	Number.	Per Cent.
Agriculture or horticulture (practical), . . . . .	53	44.92
Agriculture or horticulture (professional), . . . . .	43	36.44
Miscellaneous, . . . . .	1	.85
Professions, . . . . .	3	2.54
Undecided or no statistics, . . . . .	18	15.25
	118	100.00

*I. Farm Experience.*

	Number.	Per Cent.
Brought up on a farm, . . . . .	34	28.81
Not brought up on a farm and having had no or practically no farm experience.	23	19.49
Not brought up on a farm but having had some farm experience.	61	51.70
	118	100.00

*J. Miscellaneous Statistics.*

Average age, . . . . .	19.08 years.
Number signifying their intention to seek student labor, . . . . .	73 (61.86 per cent.).
Number boarding at the college dining hall, . . . . .	63 (53.39 per cent.).

TABLE IX. — *Entrance Statistics of Freshman Class.*

Number of applications (preliminary applications number 41),	197
Admitted,	130
Matriculated,	108
Allowed probationary entrance,	10
Failed to report,	22
Rejected,	67
Total,	197
Matriculated on certificate,	43
Matriculated on certificate and examination,	49
Matriculated on examination,	3
Matriculated on credentials from other colleges,	5
Matriculated on regents' credentials,	2
Re-entered,	6
Entered on probation,	10
Total,	118
Entered with conditions,	51
Entered without conditions,	67
Total,	118

TABLE X. — *Cases treated at the Infirmary, Dec. 1, 1916, to Nov. 30, 1917.*

	Daily Count.	Individual Count.
December 1, 1916, to January 1, 1917: —		
House cases,	4	1
Out-patients,	31	31
January 1 to February 1: —		
House cases,	31	6
Out-patients,	47	41
February 1 to March 1: —		
House cases,	20	6
Out-patients,	83	38
March 1 to April 1: —		
House cases,	38	7
Out-patients,	107	36
April 1 to May 1: —		
House cases,	141	22
Out-patients,	65	37
May 1 to June 3: —		
House cases,	45	4
Out-patients,	15	4
June 3 to June 15: —		
House cases,	9	1
Out-patients,	—	—
October 10 to November 1: —		
House cases,	27	4
Out-patients,	30	17
November 1 to December 1: —		
House cases,	43	7
Out-patients,	77	26

TABLE X. — *Cases treated at the Infirmary, Dec. 1, 1916, to Nov. 30, 1917*  
— Concluded.

Number of house cases, . . . . .	358
Number of out-patients, . . . . .	455
Total, . . . . .	813
Number cared for in the house, . . . . .	58
Number cared for as out-patients, . . . . .	230
Total, . . . . .	288



# REPORT OF THE TREASURER

FOR THE FISCAL YEAR ENDING NOV. 30, 1917.

## BALANCE SHEET.

	DR.	CR.
<b>1916.</b>		
Dec. 1. To balance on hand, . . . . .	\$41,854 54	
<b>1917.</b>		
Nov. 30. To receipts for fiscal year, . . . . .	656,653 90	\$675,746 92
Expenditures for fiscal year, . . . . .		22,761 52
Balance on hand, . . . . .		
	\$698,508 44	\$698,508 44

## SCHEDULE A. — INCOME.

	Items.	Totals.
Income from students and others, . . . . .		\$96,972 93
Tuition, . . . . .	\$2,845 00	
Laboratory fees, . . . . .	7,517 75	
Rents, . . . . .	5,538 73	
Department sales, . . . . .	69,052 87	
Department transfers, . . . . .	6,430 90	
Miscellaneous, . . . . .	5,587 68	
Income from grants by nation and State: —		
State aid, . . . . .		434,296 47
Income from endowment, . . . . .	\$3,313 32	
Appropriation for current expenses, . . . . .	273,500 00	
Administration, . . . . .	\$39,000 00	
Maintenance, . . . . .	121,500 00	
Instruction, . . . . .	105,000 00	
Graduate school, . . . . .	3,000 00	
Additional land, . . . . .	5,000 00	
Appropriation for extension service, . . . . .	50,000 00	
Appropriation for experiment station, . . . . .	41,000 00	
Maintenance, . . . . .	\$35,000 00	
Feed law, . . . . .	6,000 00	
Receipts from special appropriation, . . . . .	66,483 15	
Federal aid, . . . . .		87,227 51
Income from land grant of 1862, . . . . .	\$7,300 00	
Income from Hatch fund of 1887, . . . . .	15,000 00	
Income from Adams fund of 1906, . . . . .	15,000 00	
Income from Morrill fund of 1890, . . . . .	16,666 67	
Income from Nelson fund of 1907, . . . . .	16,666 66	
Income from Smith-Lever fund of 1914, . . . . .	16,594 18	

\* \$17,500 of this amount granted as emergency maintenance appropriation.

SCHEDULE A. — INCOME — *Concluded.*

	Items.	Totals.
Income from other sources: —		
Income from experiment station, . . . . .		\$30,826 61
Fertilizer receipts, . . . . .	\$9,040 00	
Agricultural receipts, . . . . .	4,810 22	
Cranberry receipts, . . . . .	3,172 02	
Chemical receipts, . . . . .	11,939 54	
Miscellaneous receipts, . . . . .	1,864 83	
Income from extension service, . . . . .		7,330 38
Winter school, . . . . .	\$480 00	
Summer school, . . . . .	3,058 68	
Correspondence courses receipts, . . . . .	661 64	
Exhibits, . . . . .	575 00	
Civic improvements, . . . . .	340 91	
Miscellaneous receipts, . . . . .	2,214 15	
Total, . . . . .	\$656,653 90	\$656,653 90

## CLASSIFICATION OF INCOME FROM STUDENTS AND OTHERS.

	Laboratory Fees.	Department Sales.	Transfers.	Rent.	Miscellaneous.	Tuition.	Totals.
Agricultural education, . . . . .	-	-	-	-	\$10 70	-	\$10 70
Agromony, . . . . .	\$432 50	\$37 80	\$10 80	-	-	-	481 10
Animal husbandry, . . . . .	276 50	-	-	-	2 46	-	278 96
Beekeeping, . . . . .	-	463 00	4 83	-	-	-	467 83
Botany, . . . . .	1,077 50	15 29	4 30	\$15 43	-	-	1,112 52
Chemistry, . . . . .	2,632 00	12 56	3 05	-	160 85	-	2,808 46
Dairying, . . . . .	268 00	20,397 31	786 44	-	-	-	21,451 75
Entomology, . . . . .	99 00	27 44	-	-	-	-	126 44
Farm administration, . . . . .	139 00	23 02	36	-	3 67	-	171 05
Floriculture, . . . . .	169 25	3,333 92	40 41	-	-	-	3,543 58
Farm, . . . . .	-	27,570 28	3,432 65	-	-	-	31,002 93
Forestry, . . . . .	50 00	-	33 00	-	26 00	-	109 00
Freshman agriculture, . . . . .	115 00	-	-	-	-	-	115 00
General agriculture, . . . . .	-	-	11	-	12 15	-	12 26
General horticulture, . . . . .	-	2,006 77	1,997 63	-	288 83	-	4,293 23
Graduate school, . . . . .	3 00	-	-	-	-	-	3 00
Grounds, . . . . .	-	-	40 04	-	69 53	-	109 57
Hospital, . . . . .	-	-	-	-	90 00	-	90 00
Landscape gardening, . . . . .	263 00	3 73	2 24	-	-	-	268 97
Language and literature, . . . . .	232 00	-	-	-	-	-	232 00

CLASSIFICATION OF INCOME FROM STUDENTS AND OTHERS—*Concluded.*

	Laboratory Fees.	Department Sales.	Transfers.	Rent.	Miscellaneous.	Tuition.	Totals.
Library, . . . . .	-	\$34 74	-	-	\$466 36	-	\$501 10
Market gardening, . . . . .	\$104 00	2,715 25	\$66 19	-	-	-	2,885 44
Mathematics, . . . . .	107 75	-	-	-	-	-	107 75
Microbiology, . . . . .	322 50	-	1 50	-	323 50	-	647 50
Military, . . . . .	-	-	-	-	4 40	-	4 40
Miscellaneous, . . . . .	-	-	-	-	157 00	-	157 00
Physics, . . . . .	63 00	-	-	\$9 00	-	-	72 00
Pomology, . . . . .	102 00	1,986 63	80	-	-	-	2,089 43
Poultry husbandry, . . . . .	158 50	10,258 76	4 90	-	-	-	10,422 16
Rural engineering, . . . . .	350 25	10 00	-	-	7 21	-	367 46
Veterinary, . . . . .	35 00	55 14	-	-	-	-	90 14
Zoology and geology, . . . . .	518 00	-	-	-	-	-	518 00
War emergency, . . . . .	-	81 55	-	-	-	-	81 55
Operating and maintenance, . . . . .	-	-	-	-	3,954 52	\$2,845 00	6,799 52
North dormitory, . . . . .	-	-	-	1,579 67	-	-	1,579 67
South dormitory, . . . . .	-	-	-	2,257 17	-	-	2,257 17
College residence, . . . . .	-	-	-	583 21	-	-	583 21
President's office, . . . . .	-	14 63	1 65	-	-	-	16 28
Executive order, . . . . .	-	-	-	-	10 50	-	10 50
Draper Hall, . . . . .	-	-	-	1,094 25	-	-	1,094 25
Totals, . . . . .	\$7,517 75	\$69,052 87	\$6,430 90	\$5,538 73	\$5,587 68	\$2,845 00	\$96,972 93



## SCHEDULE B. — EXPENDITURES FOR FISCAL YEAR.

	Items.	Totals.
College expenses, . . . . .		\$416,399 99
Administration, . . . . .	\$35,956 38	
Maintenance, . . . . .	229,531 36	
Instruction, . . . . .	150,912 25	
Experiment station, . . . . .		101,661 67
Administration, . . . . .	\$1,234 51	
Feed inspection, . . . . .	6,772 57	
Fertilizer law, . . . . .	9,287 40	
Salaries, . . . . .	45,271 80	
Department, . . . . .	39,095 39	
Extension service, <sup>1</sup> . . . . .		81,952 97
Salaries, . . . . .	\$48,097 39	
Travel, . . . . .	13,009 99	
Departments, . . . . .	20,845 59	
Special appropriation, . . . . .		75,732 29
1914, agricultural building, . . . . .	\$140 11	
1915, microbiology building, . . . . .	2,760 66	
1916, improvements and equipment, . . . . .	2,663 23	
1916, rural engineering shop, . . . . .	2,379 90	
1916, market-garden field station, . . . . .	7,968 52	
1916, Mount Toby demonstration forest, . . . . .	30,000 00	
1917, improvements and equipment, . . . . .	15,213 12	
1917, market-garden field station, . . . . .	6,825 86	
1917, power plant improvements, . . . . .	7,417 71	
Special architect, . . . . .	358 18	
Total, . . . . .	\$675,746 92	\$675,746 92

<sup>1</sup> Made up from State extension service and Smith-Lever funds.

## ANALYSIS OF COLLEGE EXPENDITURES.

ADMINISTRATION.	Office Supplies.	Office Expense.	Salaries and Labor.	Travel.	Minor Equip-ment.	Building Supplies.	Publicity and Lectures.	Student Activity.	Com-mence-ment.	Miscel-laneous.	Totals.
Dean's office, . . . . .	.	\$297 50	\$262 24	-	\$4 36	-	-	\$572 50	-	\$2,107 58	\$504 10
Executive order, . . . . .	.	-	-	\$1,899 77	-	-	\$1,452 61	-	-	110 99	6,169 82
President's office, . . . . .	.	968 19	155 42	49 42	45 00	\$1 97	-	-	-	-	1,330 99
Registrar's office, . . . . .	.	482 05	53 30	53 24	2 43	-	-	-	-	-	500 92
Treasurer's office, . . . . .	.	578 76	322 23	145 60	6 41	8 40	-	-	-	-18 61	1,080 01
Administration (salaries), . . . . .	.	-	26,220 54	-	-	-	-	-	-	-	26,220 54
Totals, . . . . .	.	\$2,327 40	\$27,012 73	\$2,148 03	\$58 20	\$10 37	\$1,452 61	\$572 50	\$137 36	\$2,237 18	\$35,956 38

MAINTENANCE.	Office Supplies.	Labor.	Laboratory Supplies.	Refunds.	Minor Equip-ment.	Building Supplies.	Travel.	General Expense.	Miscel-laneous.	Salaries.	Totals.
Academic maintenance: -											
Agricultural economics, . . . . .	\$126 66	\$38 10	\$15 40	-	\$4 67	-	\$39 29	-	-	-	\$224 12
Agricultural education, . . . . .	124 89	11 32	5 67	-	-	-	64 69	-	-	-	206 57
Agronomy, . . . . .	196 88	115 98	211 89	\$155 50	99 26	-	25 65	-	-	-	805 16
Animal husbandry, . . . . .	112 84	170 09	114 50	4 50	15 10	-	271 88	-	-	-	588 91
Beekeeping, . . . . .	110 44	114 62	284 67	-	294 67	\$58 26	32 40	-	-	-	1,865 19
Botany, . . . . .	190 02	514 81	421 21	187 25	33 56	68 83	-	-	-	-	1,415 68
Chemistry, . . . . .	133 65	932 63	2,773 24	697 23	39 77	63 20	-	-	-	-	4,639 72
Dairying, . . . . .	165 94	2,963 35	22,061 36	63 04	566 24	93 32	93 35	-	-	-	26,006 60
Economics and sociology, . . . . .	10 43	-	20 02	-	15 37	-	-	-	-	-	45 82
Entomology, . . . . .	97 33	215 10	77 42	16 25	111 45	-	-	-	-	-	517 83
Farm administration, . . . . .	122 44	51 92	75 34	24 00	5 21	-	6 57	-	-	-	285 48
Foreculture, . . . . .	93 40	4,480 78	1,339 54	36 25	23 66	93 10	72 84	-	-	-	6,119 57
Forestry, . . . . .	18 00	66 16	29 19	3 00	127 14	-	43 50	-	-	-	283 99
Freshman agriculture, . . . . .	-	85	15 69	4 00	70 95	-	-	-	-	-	20 54
General agriculture, . . . . .	-	1,144 79	-	-	-	185 72	-	\$137 75	\$0 45	-	1,539 66



## CURRENT ACCOUNTS.

*Disbursements and Receipts.*

ACCOUNTS.	Disbursements from Nov. 30, 1916, to Nov. 30, 1917.	Receipts from Nov. 30, 1916, to Nov. 30, 1917.	Apportionment for Year ending Nov. 30, 1917.	Balance to Credit.
Administration:—				
Dean's office, . . . . .	\$564 10	—	\$600 00	\$35 90
Executive order, . . . . .	6,169 82	\$10 50	7,800 00	1,640 68
President's office, . . . . .	1,330 99	16 28	1,250 00	—64 71
Registrar's office, . . . . .	590 92	—	600 00	9 08
Salaries, . . . . .	26,220 54	—	28,000 00	1,779 46
Treasurer's office, . . . . .	1,080 01	—	1,000 00	—80 01
State Treasurer, . . . . .	—	39,000 00	—	—
Maintenance, academic:—				
Agricultural economics, . . . . .	224 12	—	200 00	—24 12
Agricultural education, . . . . .	206 57	10 70	500 00	304 13
Agronomy, . . . . .	805 16	481 10	450 00	125 94
Animal husbandry, . . . . .	588 91	278 96	400 00	90 05
Beekeeping, . . . . .	1,865 19	467 83	1,500 00	102 64
Botany, . . . . .	1,415 68	1,112 52	800 00	496 84
Chemistry, . . . . .	4,639 72	2,808 46	2,000 00	168 74
Dairying, . . . . .	26,006 60	21,451 75	5,000 00	445 15
Economics and sociology, . . . . .	45 82	—	50 00	4 18
Entomology, . . . . .	517 83	126 44	750 00	358 61
Farm administration, . . . . .	285 48	171 05	250 00	135 57
Floriculture, . . . . .	6,119 57	3,543 58	2,740 00	164 01
Forestry, . . . . .	283 99	109 00	375 00	200 01
Freshman agriculture, . . . . .	20 54	115 00	—	94 46
General agriculture, . . . . .	1,539 66	12 26	1,500 00	—27 40
History and government, . . . . .	4 03	—	25 00	20 97
Hospital, . . . . .	1,848 25	90 00	1,700 00	—58 25
Landscape gardening, . . . . .	344 43	268 97	—	—75 46
Language and literature, . . . . .	287 42	232 00	350 00	294 58
Market gardening, . . . . .	4,116 42	2,885 44	1,600 00	369 02
Mathematics, . . . . .	215 45	107 75	150 00	42 30
Microbiology, . . . . .	1,417 04	647 50	1,200 00	430 46
Military science, . . . . .	1,521 24	4 40	1,450 00	—66 84
Mount Toby, . . . . .	52 96	—	500 00	447 04
Physical education, . . . . .	880 65	—	700 00	—180 65
Physics, . . . . .	527 12	72 00	600 00	144 88
Pomology, . . . . .	3,402 54	2,039 48	1,875 00	561 94
Poultry husbandry, . . . . .	14,540 68	10,422 16	2,800 00	—1,318 52
Rural engineering, . . . . .	583 74	367 46	400 00	183 72
Rural sociology, . . . . .	149 72	—	175 00	25 28
Veterinary science, . . . . .	1,076 31	90 14	1,300 00	313 83
War emergency, . . . . .	1,540 32	81 55	—	—1,458 77
Zoology and geology, . . . . .	527 60	518 00	333 00	323 40
1917 celebration, . . . . .	2,106 67	—	5,000 00	2,893 33
Maintenance, general:—				
Equipment, . . . . .	3,604 43	—	—	—3,604 43
Farm, . . . . .	42,767 91	31,002 93	3,500 00	—8,264 98
General horticulture, . . . . .	8,185 28	4,293 23	4,000 00	107 95
Graduate school, . . . . .	273 55	3 00	400 00	129 45
Grounds, . . . . .	4,360 68	109 57	4,900 00	648 89
Library, . . . . .	6,844 99	501 10	6,560 00	216 11
Operating and maintenance, . . . . .	76,587 09	12,313 82	59,040 00	—17,547 09
State Treasurer, maintenance, . . . . .	—	121,500 00	—	—
Land, . . . . .	7,200 00	5,000 00	1,650 00	—550 00
Endowment fund, . . . . .	—	10,613 32	—	—
Instruction:—				
Salaries, . . . . .	150,912 25	157 00	157,000 00	6,244 75
United States Treasurer, Morrill fund, . . . . .	—	16,666 67	—	—
United States Treasurer, Nelson fund, . . . . .	—	16,666 66	—	—
State Treasurer, instruction, . . . . .	—	105,000 00	—	—
Graduate school, . . . . .	—	3,000 00	—	—
Totals, . . . . .	\$416,399 99	\$414,419 58	\$312,973 00	—
Balance beginning fiscal year Dec. 1, 1916, . . . . .	—	19,696 41	—	—
Balance on hand Nov. 30, 1917, . . . . .	17,716 00	—	—	—
Totals, . . . . .	\$434,115 99	\$434,115 99	—	—



## COLLEGE ACCOUNTS.

*Comparative Disbursements and Receipts for 1916-17.*

ACCOUNTS.	DISBURSEMENTS.		RECEIPTS.	
	1916.	1917.	1916.	1917.
Agricultural economics, . . . . .	\$228 28	\$224 12	\$21 00	-
Agricultural education, . . . . .	493 27	206 57	70 00	\$10 70
Agronomy, . . . . .	738 69	805 16	137 75	481 10
Animal husbandry, . . . . .	398 51	588 91	280 88	278 96
Beekeeping, . . . . .	1,682 36	1,865 19	288 05	467 83
Botany, . . . . .	1,490 06	1,415 68	1,123 95	1,112 52
Chemistry, . . . . .	5,019 78	4,639 72	2,551 16	2,808 46
Dairying, . . . . .	24,845 24	26,006 60	20,678 17	21,451 75
Dean's office, . . . . .	529 78	564 10	-	-
Economics and sociology, . . . . .	39 61	45 82	-	-
Entomology, . . . . .	615 75	517 83	91 26	126 44
Equipment, . . . . .	1,789 65	3,604 43	-	-
Executive order, . . . . .	8,421 77	6,169 82	37 88	10 50
Farm administration, . . . . .	394 84	285 48	102 05	171 05
Farm, . . . . .	35,143 56	42,767 91	28,986 93	31,002 93
Floriculture, . . . . .	6,320 55	6,119 57	3,517 05	3,543 58
Forestry, . . . . .	314 48	283 99	10 50	109 00
Freshman agriculture, . . . . .	-	20 54	-	115 00
General agriculture, . . . . .	1,610 14	1,539 66	124 64	12 26
General horticulture, . . . . .	8,586 92	8,185 28	4,067 29	4,293 23
Graduate school, . . . . .	134 61	273 55	2 00	3 00
Grounds, . . . . .	5,092 93	4,360 68	25 32	109 57
History and government, . . . . .	1 40	4 03	-	-
Hospital, . . . . .	1,209 06	1,848 25	25 73	90 00
Improvements, . . . . .	2,001 47	-	670 06	-
Land, . . . . .	8,350 00	7,200 00	-	5,000 00
Landscape gardening, . . . . .	388 94	344 43	254 92	268 97
Language and literature, . . . . .	368 86	287 42	46 25	232 00
Library, . . . . .	7,269 08	6,844 99	540 46	501 10
Market gardening, . . . . .	3,620 35	4,116 42	2,144 94	2,885 44
Mathematics, . . . . .	204 37	215 45	65 00	107 75
Military, . . . . .	1,598 58	1,521 24	44 23	4 40
Microbiology, . . . . .	1,177 81	1,417 04	446 93	647 50
Miscellaneous, . . . . .	5,434 41	-	2,881 15	-
Mount Toby, . . . . .	-	52 96	-	-
Physical education, . . . . .	1,020 96	880 65	98 50	-
Physics, . . . . .	659 80	527 12	14 96	72 00
Pomology, . . . . .	3,411 79	3,402 54	1,652 05	2,089 48
Poultry husbandry, . . . . .	9,403 41	14,540 68	6,470 41	10,422 16
President's office, . . . . .	1,107 51	1,330 99	-	16 28
Registrar's office, . . . . .	578 92	590 92	-	-
Rural engineering, . . . . .	660 07	583 74	215 23	367 46
Rural sociology, . . . . .	129 99	149 72	1 59	-
Salaries, . . . . .	167,564 58	177,132 79	-	157 00
Treasurer's office, . . . . .	1,070 76	1,080 01	-	-
Veterinary science, . . . . .	1,339 60	1,076 31	22 32	90 14
Zoology and geology, . . . . .	555 17	527 60	449 18	518 00
War emergency, . . . . .	-	1,540 32	-	81 55
1917 celebration, . . . . .	-	2,106 67	-	-
Operating and maintenance, . . . . .	71,665 52	76,587 09	15,915 50	12,313 82
State Treasurer:—				
Endowment fund, . . . . .	-	-	10,613 32	10,613 32
Graduate school, . . . . .	-	-	3,000 00	3,000 00
Maintenance, . . . . .	-	-	107,000 00	121,500 00
Instruction, . . . . .	-	-	100,000 00	105,000 00
Administration, . . . . .	-	-	35,000 00	39,000 00
United States Treasurer:—				
Morrill fund, . . . . .	-	-	16,666 66	16,666 67
Nelson fund, . . . . .	-	-	16,666 67	16,666 66
Totals, . . . . .	\$394,683 19	\$416,399 99	\$383,021 94	\$414,419 58
Balance beginning fiscal year, . . . . .	-	-	31,357 66	19,696 41
Balance on hand at close of fiscal year, . . . . .	19,696 41	17,716 00	-	-
Totals, . . . . .	\$414,379 60	\$434,115 99	\$414,379 60	\$434,115 99

COLLEGE ACCOUNTS — *Concluded.**Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1916, . . . . .		\$19,696 41
Institution receipts Nov. 30, 1917, . . . . .		96,972 93
State Treasurer's receipts Nov. 30, 1917, . . . . .		284,113 32
United States Treasurer's receipts Nov. 30, 1917, . . . . .		33,333 33
Total disbursements, . . . . .	\$416,399 99	-
	\$416,399 99	\$434,115 99
Bills receivable Dec. 1, 1916, deducted, . . . . .		8,077 39
Bills payable Dec. 1, 1916, deducted, . . . . .	6,250 83	
	\$410,149 16	\$426,038 60
Bills receivable Nov. 30, 1917, . . . . .	-	10,034 55
Bills payable Nov. 30, 1917, . . . . .	3,781 30	-
Balance, . . . . .	22,142 69	-
	\$436,073 15	\$436,073 15

## FARM DISBURSEMENTS.

	Labor.	Equipment.	Feed.	Fertilizer.	Seeds.	Supplies.	Improvements.	Totals.
Cattle,	\$6,520 52	-	\$9,149 80	-	-	\$681 05	-	\$16,351 37
Dairy,	2,178 19	\$541 52	-	-	-	2,795 40	-	5,515 11
Horses,	2,070 47	-	2,863 72	-	-	448 12	-	5,382 31
Sheep,	239 89	-	529 02	-	-	20 60	-	789 51
Swine,	810 85	-	1,735 29	-	-	102 50	-	2,648 64
Field crops,	5,119 63	-	-	\$1,038 61	\$732 54	52 97	-	6,943 75
Miscellaneous,	1,793 50	-	-	-	-	125 56	\$2,265 56	4,184 62
Tools and machinery,	-	-	-	-	-	952 60	-	952 60
Live stock,	-	-	-	-	-	-	-	-
Totals,	\$18,733 05	\$541 52	\$14,277 83	\$1,038 61	\$732 54	\$5,178 80	\$2,265 56	\$42,767 91

## FARM CREDITS.

	Onions.	Milk.	Stock.	Sundry.	Hay.	Roots.	Labor.	Potatoes.	Totals.
Cattle,	-	\$16,287 07	\$2,223 85	\$195 17	-	-	-	-	\$18,706 09
Dairy,	-	6,299 34	-	124 74	-	-	-	-	6,424 08
Horses,	-	-	453 50	913 71	-	-	-	-	1,367 21
Sheep,	-	-	246 36	185 56	-	-	-	-	431 92
Swine,	-	-	2,445 22	4 00	-	-	-	-	2,449 22
Field crops,	\$305 50	-	-	-	\$77 92	\$1 79	\$623 45	\$282 93	668 14
Miscellaneous,	-	-	-	332 82	-	-	-	-	956 27
Totals,	\$305 50	\$22,586 41	\$5,363 93	\$1,756 00	\$77 92	\$1 79	\$623 45	\$282 93	\$31,002 93

## AGRICULTURAL DIVISION.

*Disbursements and Receipts.*

	Disbursements.	Receipts.
Agronomy, . . . . .	\$805 16	\$481 10
Animal husbandry, . . . . .	588 91	278 96
Dairying, . . . . .	26,006 60	21,451 75
Farm, . . . . .	42,767 91	31,002 93
Farm administration, . . . . .	285 48	171 05
Poultry husbandry, . . . . .	14,540 68	10,422 16
Rural engineering, . . . . .	583 74	367 46
Division totals, . . . . .	\$85,578 48	\$64,175 41

*Summary.*

	Dr.	Cr.
By total division receipts, . . . . .		\$64,175 41
By bills receivable, . . . . .		7,287 68
By net apportionment, . . . . .		12,800 00
To total disbursements, . . . . .	\$85,578 48	
To bills payable, . . . . .	2,324 32	
Balance, . . . . .		3,639 71
	\$87,902 80	\$87,902 80

*Inventory of Quick Assets.*

	Nov. 30, 1916.	Nov. 30, 1917.
Inventory of produce, . . . . .	\$8,533 40	\$12,668 84
Inventory of cattle, . . . . .	14,200 00	17,485 00
Inventory of swine, . . . . .	1,505 00	1,495 00
Inventory of horses, . . . . .	6,765 00	6,440 00
Inventory of poultry, . . . . .	2,277 00	2,531 75
Inventory of sheep, . . . . .	668 00	1,013 00
	\$33,948 40	\$41,633 59

## HORTICULTURAL DIVISION.

*Disbursements and Receipts.*

	Disbursements.	Receipts.
Floriculture, . . . . .	\$6,119 57	\$3,543 58
Forestry, . . . . .	283 99	109 00
General horticulture, . . . . .	8,185 28	4,293 23
Grounds, . . . . .	4,360 68	109 57
Landscape gardening, . . . . .	344 43	268 97
Market gardening, . . . . .	4,116 42	2,885 44
Pomology, . . . . .	3,402 54	2,089 48
Division totals, . . . . .	\$26,812 91	\$13,299 27



HORTICULTURAL DIVISION — *Concluded.*

*Summary.*

	DR.	CR.
By total division receipts, . . . . .		\$13,299 27
By bills receivable, . . . . .		1,363 72
By net apportionment, . . . . .		15,490 00
To total division disbursement, . . . . .	\$26,812 91	
To bills payable, . . . . .	129 22	
By balance, . . . . .	3,210 86	
	\$30,152 99	\$30,152 99

*Inventory of Quick Assets.*

	Nov. 30, 1916.	Nov. 30, 1917.
Floriculture, . . . . .	\$500 00	\$1,200 00
Market gardening, . . . . .	150 00	917 50
Pomology, . . . . .	575 00	419 00
General horticulture (live stock), . . . . .	1,750 50	1,810 00
	\$2,975 50	\$4,346 50

## EXPENSE OPERATING AND MAINTENANCE.

	Salaries.	Labor.	Fuel and Water.	Repairs.	Supplies.	Tools.	Architect.	Engineer.	Miscellaneous.	Totals.
General:—	\$2,319 97	—	—	—	—	—	—	—	—	\$2,319 97
General superintendent,	—	\$771 37	—	—	—	—	—	—	—	771 37
Office,	—	—	—	—	\$5,284 67	—	—	—	—	5,284 67
General expense,	—	—	—	—	—	—	—	—	—	—
Power plant:—	—	—	—	—	—	—	—	—	—	—
Heat,	—	6,745 03	\$41,216 83	\$694 26	48 02	—	—	—	—	48,704 14
Light,	—	1,069 61	8 72	185 95	60 71	—	—	—	—	1,324 99
Tools,	—	—	—	—	—	\$688 85	—	—	—	688 85
Gas mains,	—	2 77	—	—	—	—	—	—	—	2 77
Amherst Water Company,	—	—	—	—	—	—	—	—	—	—
Night watchman,	—	1,426 01	2,100 27	—	—	—	—	—	—	2,100 27
Mail service,	—	407 90	—	—	—	—	—	—	—	1,426 01
Water mains,	—	65 97	—	—	—	—	—	—	—	407 90
Steam mains,	—	462 99	—	—	—	—	—	—	—	65 97
Electric light circuit,	—	188 93	—	—	—	—	—	—	—	462 99
Waiting station,	—	1 02	—	—	—	—	—	—	—	188 93
Miscellaneous sundry,	—	—	—	—	—	—	—	—	—	1 02
Sewers and cesspools,	—	62 42	—	—	—	—	—	—	—	2,724 70
Walks,	—	12 52	—	—	—	—	—	—	—	62 42
Emergency maintenance,	—	767 66	—	—	—	—	—	—	—	12 52
Expert service,	—	—	—	—	—	—	—	—	—	767 66
Fire department,	—	12 99	—	—	70 73	—	\$1,064 84	\$825 57	101 40	1,991 81
Totals,	\$2,319 97	\$11,997 19	\$43,325 82	\$380 21	\$5,464 13	\$688 85	\$1,064 84	\$825 57	\$2,826 10	\$69,302 68

EXPENSE OPERATING AND MAINTENANCE — *Continued.*

	Electric Repairs.	Plumbing Repairs.	Heat Repairs.	C. and M. Repairs.	Janitor.	Bell Ringing.	Sundry.	Totals.
College buildings:—								
Animal husbandry building, .	—	\$4 70	\$25 31	\$1 69	—	—	—	\$31 70
Horse barn, .	\$1 35	66	5 52	21 26	—	—	—	28 79
Dairy barn, .	3 34	19 55	9 26	20 26	—	—	—	52 41
Young stock barn, .	—	—	—	6 69	—	—	—	6 69
Power building, .	32 11	1 43	16 20	62 43	—	—	—	302 69
Chemical building, .	6 70	72 69	10 25	237 82	—	—	—	347 46
Poultry building, .	3 72	6 28	5 59	32 79	—	—	—	48 38
Dairy building, .	21 33	113 60	88 51	214 20	—	—	—	437 64
Drill hall, .	90	51 82	5 18	122 01	—	—	—	179 91
Veterinary building, .	58	1 18	7 91	1 10	—	—	—	10 77
Apiary building, .	5 66	3 56	5 31	10 91	—	—	—	25 44
Mathematics building, .	86	26 72	37 12	141 66	—	—	—	206 36
Entomology building, .	10 83	23 99	44 37	76 04	—	—	—	155 23
Clark hall, .	51	88 64	25 46	21 43	—	—	—	136 04
French hall, .	61 04	4 30	13 53	1 85	—	—	—	80 72
Wilder hall, .	7 71	23 98	12 31	18 47	—	—	—	62 47
Upper plant house, .	—	47	8 64	2 32	—	—	—	11 43
Old Duffee range, .	—	17 49	5 20	—	—	—	—	22 69
Horticulture barn, .	1 12	3 65	—	39 99	—	—	—	44 76
Physics building, .	—	3 99	91	16 16	—	—	—	21 06
East experiment station, .	—	3 65	17 18	16 49	—	—	—	37 32
West experiment station, .	2 23	39 33	6 22	34 33	—	—	—	82 11
East experiment station barn, .	—	—	—	4 18	—	—	—	4 18
Rural engineering station barn, .	1 02	8 62	6 59	65 37	—	—	—	80 58
Microbiology building, .	49 28	26 67	58 93	103 92	—	—	—	107 61
Draper hall, .	32 29	114 27	28 26	34 07	—	—	—	169 25
Hospital, .	1 63	10 87	1 75	369 24	—	—	\$430 68	974 74
Stockbridge hall, .	17 96	19 35	64 02	11 29	—	—	—	25 54
Cold-storage building, .	—	—	—	367 95	—	—	—	469 28
Machine barn, .	—	—	—	33 11	—	—	—	33 11
Poultry storage building, .	—	1 71	1 24	2 02	—	—	—	3 26
Poultry demonstration house, .	—	1 71	—	—	—	—	—	2 22
	—	—	—	—	—	—	—	2 02





EXPERIMENT STATION.  
*Disbursements and Receipts.*

ACCOUNTS.	Disbursements from Dec. 1, 1916, to Nov. 30, 1917.	Receipts from Dec. 1, 1916, to Nov. 30, 1917.	Apportionment for Year ending Nov. 30, 1917.	Balance to Credit.
Administration, . . . . .	\$1,234 51	\$3 48	\$1,200 00	—\$31 03
Agricultural economics, . . . .	368 21	—	750 00	381 79
Agriculture, . . . . .	8,490 16	4,810 22	3,100 00	—579 94
Apiculture, . . . . .	51 12	—	120 00	68 88
Botanical, . . . . .	2,103 43	32 90	2,080 00	9 47
Chemical, . . . . .	12,970 28	11,939 54	1,000 00	—30 74
Cranberry, . . . . .	3,528 49	3,172 02	3,000 00	2,643 53
Entomological, . . . . .	413 18	75	625 00	212 57
Equipment, . . . . .	197 72	—	750 00	552 28
Feed inspection, . . . . .	6,772 57	6,000 00	2,048 07 <sup>1</sup>	1,275 50
Fertilizer inspection, . . . . .	9,287 40	9,040 00	859 81 <sup>1</sup>	612 41
Freight and express, . . . . .	256 70	5 51	400 00	148 81
Graves' orchard, . . . . .	533 64	133 48	700 00	299 84
Horticultural, . . . . .	1,832 30	7 85	1,800 00	—24 45
Library, . . . . .	518 51	—	700 00	181 49
Meteorology, . . . . .	358 22	—	400 00	41 78
Microbiology, . . . . .	1,704 14	—	1,725 00	20 86
Poultry, . . . . .	1,907 25	—	2,000 00	92 75
Publications, . . . . .	735 22	—	1,000 00	264 78
Salaries, . . . . .	45,271 80	—	47,400 00	2,128 20
Tillson farm, . . . . .	1,666 66	1,120 55	1,400 00	853 89
Treasurer's office, . . . . .	336 59	—	350 00	13 41
Veterinary, . . . . .	1,123 57	560 31	725 00	161 74
Hatch fund, . . . . .	—	15,000 00	—	—
Adams fund, . . . . .	—	15,000 00	—	—
State fund, . . . . .	—	35,000 00	—	—
Totals, . . . . .	\$101,661 67	\$101,826 61	\$74,132 88	—
Balance beginning fiscal year Dec. 1, 1916.	—	8,523 40	—	—
Balance on hand Nov. 30, 1917,	8,688 34	—	—	—
Totals, . . . . .	\$110,350 01	\$110,350 01	—	—

<sup>1</sup> Balance from previous year.

EXPERIMENT STATION — *Continued.*  
*Comparative Disbursements and Receipts, 1916-17.*

ACCOUNTS.	DISBURSEMENTS.		RECEIPTS.	
	1916.	1917.	1916.	1917.
Administration, . . . . .	\$1,029 25	\$1,234 51	\$13 46	\$3 48
Agricultural economics, . . . . .	650 24	368 21	-	-
Agriculture, . . . . .	7,417 23	8,490 16	5,080 69	4,810 22
Apiculture, . . . . .	102 73	51 12	-	-
Asparagus, . . . . .	12 26	-	-	-
Botanical, . . . . .	1,589 04	2,103 43	30 00	32 90
Chemical, . . . . .	12,069 86	12,970 28	12,002 98	11,939 54
Cranberry, . . . . .	3,106 97	3,528 49	2,771 12	3,172 02
Entomological, . . . . .	452 21	413 18	-	75
Equipment, . . . . .	717 02	197 72	-	-
Feed inspection, . . . . .	5,632 53	6,772 57	6,000 00	6,000 00
Fertilizer inspection, . . . . .	11,434 88	9,287 40	9,400 00	9,040 00
Freight and express, . . . . .	382 33	256 70	91 26	5 51
Graves' orchard, . . . . .	658 13	533 64	1,131 15	133 48
Horticultural, . . . . .	1,700 83	1,832 30	53 08	7 85
Library, . . . . .	682 10	518 51	-	-
Meteorology, . . . . .	369 11	358 22	-	-
Microbiology, . . . . .	273 80	1,704 14	-	-
Poultry, . . . . .	1,811 21	1,907 25	-	-
Publications, . . . . .	795 14	735 22	-	-
Salaries, . . . . .	42,986 41	45,271 80	-	-
Tillson farm, . . . . .	1,921 78	1,666 66	320 96	1,120 55
Treasurer's office, . . . . .	181 70	336 59	-	-
Veterinary, <sup>1</sup> . . . . .	977 83	1,123 57	506 00	560 31
Hatch fund, . . . . .	-	-	15,000 00	15,000 00
Adams fund, . . . . .	-	-	15,000 00	15,000 00
State fund, . . . . .	-	-	30,000 00	35,000 00
Totals, . . . . .	\$96,954 59	\$101,661 67	\$97,400 70	\$101,826 61
Balance beginning of fiscal year, . .	-	-	8,077 29	8,523 40
Balance on hand at close of fiscal year,	8,523 40	8,688 34	-	-
Totals, . . . . .	\$105,477 99	\$110,350 01	\$105,477 99	\$110,350 01

<sup>1</sup> This includes blood test.

EXPERIMENT STATION — *Concluded.*  
*Analysis of Experiment Station Accounts.*

	Adams Fund.	Feed Law.	Fertilizer Law.	Hatch Fund.	State Fund.	Totals.
Salaries, . . . . .	\$14,647 06	\$3,890 99	\$6,253 32	\$15,001 27	\$15,623 47	\$55,416 11
Labor, . . . . .	-	277 81	500 85	-	23,900 71	24,679 37
Publications, . . . . .	-	784 20	872 70	-	690 72	2,347 62
Postage and stationery, . .	-	73 23	81 33	-	1,462 76	1,617 32
Freight and express, . . .	-	6 57	24 67	-	304 78	336 02
Heat, light, water and power, . . . . .	-	35 13	131 26	-	397 89	564 28
Chemical and laboratory supplies, . . . . .	-	235 51	508 09	-	1,525 04	2,268 64
Seeds, plants and sundry supplies, . . . . .	-	18 70	51 00	-	2,411 71	2,481 41
Fertilizers, . . . . .	-	-	2 00	-	973 40	975 40
Feed stuffs, . . . . .	-	-	-	-	1,671 76	1,671 76
Library, . . . . .	-	-	-	-	522 60	522 60
Tools, machinery and ap- pliances, . . . . .	-	39 35	-	-	242 99	282 34
Furniture and fixtures, . .	-	-	-	-	729 74	729 74
Scientific apparatus and specimens, . . . . .	-	-	11 98	-	555 06	567 04
Live stock, . . . . .	-	-	-	-	236 72	236 72
Traveling expenses, . . . .	-	534 25	845 25	-	3,373 05	4,752 55
Contingent expenses, . . .	-	5 00	-	-	20 00	25 00
Buildings and land, . . . .	-	871 83	4 95	-	1,145 47	2,022 25
Equipment, . . . . .	-	-	-	-	165 50	165 50
Totals, . . . . .	\$14,647 06	\$6,772 57	\$9,287 40	\$15,001 27	\$55,953 37	\$101,661 67

*Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1916, . . . . .	-	\$8,523 40
Receipts from State Treasurer, . . . . .	-	41,000 00
Receipts from United States Treasurer, . . . . .	-	30,000 00
Receipts from other sources, . . . . .	-	30,826 61
Total disbursements, . . . . .	\$101,661 67	-
Bills receivable Dec. 1, 1916, deducted, . . . . .	\$101,661 67	\$110,350 01
Bills payable Dec. 1, 1916, deducted, . . . . .	865 00	2,776 06
Bills receivable Nov. 30, 1917, . . . . .	\$100,796 67	\$107,573 95
Bills payable Nov. 30, 1917, . . . . .	218 78	4,452 97
Balance, . . . . .	11,011 47	-
	\$112,026 92	\$112,026 92

## EXTENSION SERVICE.

*Disbursements and Receipts.*

CLASSIFICATION.	Disbursements.	Receipts.	Apportionment.	Balance.
Administration, . . . . .	\$1,420 55	\$63 41	\$1,600 00	\$242 86
Director's office, . . . . .	1,646 89	193 10	1,800 00	346 21
Salaries, . . . . .	31,467 10	-	33,371 66	1,904 56
Correspondence courses, . . . . .	1,374 53	661 64	400 00	-312 89
Rural civic planning, . . . . .	732 73	340 91	700 00	308 18
Local community organization, . . . . .	782 78	-	700 00	-82 78
Home economics, . . . . .	702 07	-	500 00	-202 07
Co-operative marketing, . . . . .	885 24	6 96	800 00	-78 28
County agents' work, . . . . .	461 69	-	200 00	-261 69
Animal husbandry, . . . . .	476 41	13 56	400 00	-62 85
Junior extension work, . . . . .	2,383 06	13 02	1,800 00	-570 04
Dairying, . . . . .	196 92	-	200 00	3 08
Exhibits, . . . . .	1,136 78	575 00	500 00	-61 78
Lectures, . . . . .	165 36	36 00	300 00	170 64
Farm management demonstration, . . . . .	129 69	46 90	100 00	17 21
Pomology, . . . . .	487 54	87 49	500 00	99 95
Poultry husbandry, . . . . .	465 52	179 73	300 00	14 21
Library extension, . . . . .	165 55	-	200 00	34 45
Printing, . . . . .	2,868 70	1,535 50	1,300 00	-33 20
War emergency, . . . . .	6,603 91	38 48	-	-6,565 43
Short courses, . . . . .	12,194 22	3,538 68	9,680 00	1,024 46
Reserve and emergency, . . . . .	-	-	6,578 23	-
State Treasurer, . . . . .	-	50,000 00	-	-
Totals, . . . . .	\$66,747 24	\$57,330 38	\$61,929 89	-
Balance beginning fiscal year Dec. 1, 1916, . . . . .	-	12,039 70	-	-
Balance on hand Nov. 30, 1917, . . . . .	2,622 84	-	-	-
Totals, . . . . .	\$69,370 08	\$69,370 08	-	-

*Summary.*

	Disbursements.	Receipts.
Balance Dec. 1, 1916, <sup>1</sup> . . . . .	-	\$13,634 73
Receipts Nov. 30, 1917, . . . . .	-	7,330 38
Received from State Treasurer, . . . . .	-	50,000 00
Received from United States Treasurer, . . . . .	-	16,594 18
Disbursements to Nov. 30, 1917, <sup>1</sup> . . . . .	\$81,952 97	-
Bills receivable Dec. 1, 1916, deducted, . . . . .	\$81,952 97	\$87,559 29
Bills payable Dec. 1, 1916, deducted, . . . . .	-	622 12
	116 87	-
Bills receivable Nov. 30, 1917, . . . . .	\$81,836 10	\$86,937 17
Bills payable Nov. 30, 1917, . . . . .	-	776 12
Balance, . . . . .	139 72	-
	5,737 47	-
	\$87,713 29	\$87,713 29

<sup>1</sup> Includes Federal Smith-Lever fund.



EXTENSION SERVICE — *Concluded.**Analysis of Extension Service Disbursements.*

	Travel.	Equipment.	Supplies.	Instruction and Lectures.	Salaries.	Miscellaneous.	Labor.	Totals.
Administration, . . . . .	\$1,059 90	-	\$235 27	-	-	-	\$125 38	\$1,420 55
Animal husbandry, . . . . .	409 73	-	66 68	-	-	-	-	476 41
Agricultural camps, . . . . .	135 16	-	2,327 84	\$1,000 00	-	-	122 60	3,585 60
Beekeeping, . . . . .	52 69	-	113 43	-	-	-	-	166 12
Conference rural community planning, . . . . .	141 07	-	115 93	-	-	-	84 05	257 00
Correspondence courses, . . . . .	119 09	\$2 50	1,168 89	-	-	-	-	1,374 53
Co-operative marketing, . . . . .	816 83	-	68 41	-	-	-	-	885 24
County agents' work, . . . . .	329 10	-	132 59	-	-	-	-	461 69
County agents' conference, . . . . .	17 95	-	47 98	-	-	-	-	65 93
Dairying, . . . . .	143 60	-	53 32	-	-	-	229 62	1,646 89
Director's office, . . . . .	4 92	106 25	1,306 10	-	-	-	69 99	1,136 78
Exhibits, . . . . .	50 96	-	1,015 83	-	-	-	-	129 69
Farm management demonstration, . . . . .	-	25 00	104 69	-	-	-	-	1,055 94
Farmers' week, . . . . .	306 60	-	552 34	197 00	-	-	-	702 07
Home economies, . . . . .	336 82	44 50	317 07	-	-	-	3 68	2,383 06
Junior extension work, . . . . .	1,450 51	32 25	837 99	-	-	-	62 31	165 36
Lectures, . . . . .	66 37	-	98 99	-	-	-	-	165 55
Library extension, . . . . .	-	33 53	132 02	-	-	-	31 37	782 78
Local community organization, . . . . .	597 45	-	153 96	-	-	-	-	487 54
Pomology, . . . . .	423 16	-	64 38	-	-	-	-	465 52
Poultry convention, . . . . .	396 35	-	69 17	-	-	-	-	301 51
Poultry husbandry, . . . . .	122 52	-	158 99	20 00	-	-	-	2,868 70
Printing, . . . . .	85 28	-	2,783 42	-	-	-	-	732 73
Rural civic planning, . . . . .	403 51	-	84 88	-	-	-	244 34	33,554 52
Salaries, . . . . .	-	-	527 07	-	\$33,554 52	-	-	2,976 15
Summer school, . . . . .	45 54	-	1,038 02	2,051 00	-	\$352 54	-	1,698 55
Ten weeks' course, . . . . .	11 04	-	2,505 20	561 25	-	87 64	-	6,063 91
War emergency, . . . . .	1,990 44	100 79	-	-	1,304 15	-	703 33	\$86,747 24
Totals, . . . . .	\$9,517 19	\$344 82	\$16,080 46	\$3,829 25	\$34,858 67	\$440 18	\$1,676 67	

## SMITH-LEVER FUND (FEDERAL).

	Disbursements.	Receipts.
Pomology, . . . . .	\$73 02	-
Printing, . . . . .	421 84	-
Animal husbandry, . . . . .	62 46	-
Junior extension work, . . . . .	1,513 26	-
Farm management, . . . . .	330 91	-
Poultry husbandry, . . . . .	362 00	-
Home economics, . . . . .	395 08	-
Dairying, . . . . .	110 04	-
Extension schools, . . . . .	489 19	-
Plant diseases, . . . . .	22 50	-
Sheep husbandry, . . . . .	62 06	-
Salaries, . . . . .	10,930 62	-
State leader, . . . . .	432 75	-
State Treasurer, . . . . .	-	\$16,594 18
Totals, . . . . .	\$15,205 73	\$16,594 18
Balance at beginning of fiscal year Dec. 1, 1916, . . . . .	-	1,595 03
Balance on hand Nov. 30, 1917, . . . . .	2,983 48	-
	\$18,189 21	\$18,189 21

## SPECIAL APPROPRIATIONS.

	Date made.	Appropriation.	Amount expended to Date.	Unexpended Balance.
Agricultural building, . . . . .	1914	\$210,000 00	\$209,074 65	\$925 35
Microbiology building, . . . . .	1915	67,500 00	65,450 31	2,049 69
Improvement and equipment, . . . . .	1916	20,000 00	20,000 00	-
Agricultural building, . . . . .	1916	13,732 34	12,243 49	1,488 85
Rural engineering building, . . . . .	1916	12,000 00	11,997 57	2 43
Market-gardening field station, . . . . .	1916	8,000 00	7,968 52	31 48
Mount Toby demonstration forest, . . . . .	1916	30,000 00	30,000 00	-
Improvement and equipment, . . . . .	1917	33,500 00	15,218 12	18,281 88
Market-garden field station, . . . . .	1917	10,000 00	6,825 86	3,174 14
Power plant improvements, . . . . .	1917	40,000 00	7,417 71	32,582 29
Special architect, . . . . .	1917	358 18	358 18	-
Totals, . . . . .	-	\$445,090 52	\$386,554 41	\$58,536 11
Amount spent previous to Dec. 1, 1916, . . . . .	-	-	-	310,822 12
Amount expended during fiscal year, . . . . .	-	-	-	75,732 29
Unexpended balance Nov. 30, 1917, . . . . .	-	-	58,536 11	-
	-	\$445,090 52	\$445,090 52	\$445,090 52

## INVENTORY — REAL ESTATE.

*Land (Estimated Value).*

Angus land, . . . . .	\$800 00
Allen place, . . . . .	500 00
Baker place, . . . . .	2,500 00
Bangs place, . . . . .	2,350 00
Brown land, . . . . .	500 00
Charmbury place, . . . . .	450 00
Clark place, . . . . .	4,500 00
College farm, . . . . .	37,000 00
Cranberry land, . . . . .	10,975 50
Geo. Cutler, Jr., trustee, . . . . .	2,700 00
Dickinson land, . . . . .	7,850 00
Harlow farm, . . . . .	1,584 63
Hawley and Brown place, . . . . .	675 00
Kellogg place, . . . . .	3,368 45
Loomis place, . . . . .	415 00
Louisa Baker place, . . . . .	5,000 00
Market-garden field station, . . . . .	4,800 00
Mount Toby demonstration forest, . . . . .	30,000 00
Newell farm, . . . . .	2,800 00
Old creamery place, . . . . .	1,000 00
Owen farm, . . . . .	5,000 00
Pelham quarry, . . . . .	500 00
Westcott place, . . . . .	2,250 00
Total, . . . . .	\$127,518 58

*College Buildings (Estimated Value).*

	Inventory at Beginning of Year.	Per Cent.	Value at Beginning of Year less Per Cent. De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Apiary, . . . . .	\$3,042 49	2	\$2,981 64	\$108 12	\$3,089 76
Animal husbandry building, . . . . .	9,639 33	2	9,446 54	131 70	9,578 24
Chemical laboratory, . . . . .	8,363 13	5	7,944 97	372 93	8,317 90
Clark hall, . . . . .	65,671 16	2	64,357 74	136 04	64,493 78
Cold-storage laboratory, . . . . .	11,617 21	2	11,384 87	33 11	11,417 98
Dairy building, . . . . .	73,198 22	2	71,734 26	574 45	72,308 71
Dairy barn and storage, . . . . .	28,722 00	3	27,860 34	409 88	28,270 22
Dining hall, . . . . .	57,709 05	3	55,977 78	1,018 10	56,995 88
Drill hall and gun shed, . . . . .	9,383 24	5	8,914 08	252 53	9,166 61
Durfee glass houses, old, . . . . .	9,122 25	5	8,666 14	315 48	8,981 62
Durfee glass houses, new, . . . . .	13,847 88	5	13,155 49	-	13,155 49
Entomology building, . . . . .	77,558 22	2	76,007 06	205 23	76,212 29
Farm bungalow, . . . . .	2,059 88	3	1,998 08	51 77	2,049 85
Farmhouse, . . . . .	2,578 19	3	2,500 84	37 56	2,538 40
Farmhouse No. 2, . . . . .	4,500 00	8	4,140 00	27 34	4,167 34
French hall, . . . . .	48,839 03	2	47,862 25	80 72	47,942 97
Harlow house, . . . . .	1,700 00	5	1,615 00	-	1,615 00
Horse barn, . . . . .	4,858 16	3	4,712 42	28 79	4,741 21
Head of division of horticulture, . . . . .	2,523 00	5	2,396 85	44 89	2,441 74
Horticultural barn, . . . . .	2,515 60	3	2,440 13	44 76	2,484 89
Horticultural tool shed, . . . . .	1,881 80	3	1,825 35	-	1,825 35
Hospital, . . . . .	15,232 28	2	14,927 63	25 54	14,953 17
Kellogg house, . . . . .	2,500 00	5	2,375 00	9 09	2,384 09
Machinery barn, . . . . .	3,779 26	3	3,665 88	3 26	3,669 14
Market-garden field station barn, . . . . .	-	-	-	-	3,500 00

*College Buildings (Estimated Value) — Concluded.*

	Inventory at Beginning of Year.	Per Cent.	Value at Beginning of Year less Per Cent. De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Mathematical building, . . . . .	\$5,521 88	5	\$5,245 79	\$206 36	\$5,452 15
Microbiology building, . . . . .	62,144 41	2	60,901 52	169 25	61,070 77
Mount Toby house, . . . . .	4,000 00	5	3,800 00	—	3,800 00
North dormitory, . . . . .	24,566 17	2	24,074 85	706 25	24,781 10
Physics laboratory, . . . . .	5,140 22	5	4,883 21	21 06	4,904 27
Piggery, . . . . .	2,833 14	3	2,748 15	2 44	2,750 59
Poultry department:—					
No. 1 demonstration building, . . . . .	1,387 33	2	1,359 58	2 02	1,361 60
No. 2 oil house, . . . . .	73 50	2	72 03	—	72 03
No. 3 brooder, killing and fattening laboratory, . . . . .	2,412 18	2	2,363 94	52 49	2,416 43
No. 4 mechanics, storage building and incubator cellar, . . . . .	3,447 36	2	3,378 41	105 10	3,483 51
No. 5 laying house, . . . . .	1,728 72	2	1,694 15	—	1,694 15
No. 6 manure shed, . . . . .	98 00	2	96 04	—	96 04
No. 7 small henhouse, . . . . .	49 00	2	48 02	—	48 02
No. 8 breeding house, . . . . .	1,536 64	2	1,505 91	18 00	1,523 91
No. 9 experimental breeding house, . . . . .	600 00	2	588 00	—	588 00
No. 10 duck house, . . . . .	98 00	2	96 04	—	96 04
No. 11 unit house for 200 hens, . . . . .	504 60	2	494 51	8 00	502 51
No. 12 unit house for 100 hens, . . . . .	400 00	2	392 00	13 00	405 00
Power plant and storage building, in- cluding coal pocket, . . . . .	35,279 72	2	34,574 13	4,022 75	38,596 88
President's house, . . . . .	11,782 83	3	11,429 35	712 78	12,142 13
Quarantine barn, . . . . .	517 49	3	501 97	—	501 97
Registrar's house, . . . . .	1,000 00	5	950 00	4 47	954 47
Rural engineering building, . . . . .	3,606 06	2	3,533 94	107 61	3,641 55
Sheep barn, . . . . .	1,432 27	3	1,389 30	30 02	1,419 32
South dormitory, . . . . .	35,525 35	2	34,814 84	531 45	35,346 29
Stockbridge hall, . . . . .	181,456 73	2	177,827 60	479 28	178,306 88
Agronomy greenhouse, . . . . .	2,107 00	2	2,064 86	—	2,064 86
Stockbridge house, . . . . .	1,500 00	5	1,425 00	1 66	1,426 66
Stone chapel, . . . . .	29,068 01	2	28,486 65	90 03	28,576 68
Vegetable plant house, . . . . .	4,392 72	5	4,173 08	11 43	4,184 51
Veterinary laboratory and stable, . . . . .	23,423 87	2	22,955 39	10 77	22,966 16
Waiting station, . . . . .	491 78	2	481 94	1 02	482 96
Wilder hall, . . . . .	36,159 16	2	35,435 98	62 47	35,498 45
Young stock barn, . . . . .	6,235 54	3	6,048 47	6 69	6,055 16
Totals, . . . . .	\$951,361 06	—	\$928,724 99	\$11,287 69	\$943,512 68

*College Equipment (Estimated Value).*

## Administrative division:—

Dean's office, . . . . .	\$527 60
President's office, . . . . .	1,691 00
Registrar's office, . . . . .	1,020 01
Treasurer's office, . . . . .	2,638 75

## Agricultural division:—

Agronomy, . . . . .	6,112 93
Animal husbandry, . . . . .	855 80
Dairy, . . . . .	17,916 32
Farm administration, . . . . .	47,241 56
Farm management, . . . . .	1,091 66
General agriculture, . . . . .	4,221 86
Poultry, . . . . .	6,120 47
Rural engineering, . . . . .	3,207 00
Dining hall, . . . . .	5,567 68
Extension, . . . . .	8,274 55



## General science: —

Apiary, . . . . .	- 1
Botanical, . . . . .	\$20,511 15
Chemical, . . . . .	11,450 28
Entomology, . . . . .	6,189 92
Microbiology, . . . . .	7,947 06
Mathematics, . . . . .	2,533 50
Physics, . . . . .	6,056 82
Veterinary, . . . . .	10,636 47
Zoölogical and geological, . . . . .	17,071 53

Graduate school, . . . . .	76 34
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## Horticultural division: —

Floriculture, . . . . .	29,524 61
Forestry, . . . . .	2,286 72
General horticulture, . . . . .	6,934 12
Grounds, . . . . .	1,648 82
Landscape gardening, . . . . .	5,019 56
Market gardening, . . . . .	2,144 40
Pomology, . . . . .	5,571 77

Hospital, . . . . .	907 32
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## Humanities division: —

Economics and sociology, . . . . .	160 57
Language and literature, . . . . .	421 00

Library, . . . . .	95,943 00
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Military, . . . . .	1,506 07
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## Operating and maintenance: —

College supply, . . . . .	1,877 16
Fire apparatus, . . . . .	1,851 15
General maintenance, . . . . .	123,609 36

Equipment, . . . . .	\$105,631 29
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Carpentry and masonry supplies, . . . . .	6,398 20
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Electrical supplies, . . . . .	2,581 06
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Heating and plumbing supplies, . . . . .	7,687 52
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Painting supplies, . . . . .	1,311 29
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Janitor's supplies, . . . . .	939 29
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Sewer line, . . . . .	12,137 79
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Water mains, . . . . .	10,584 31
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Physical education, . . . . .	2,196 75
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## Rural social science: —

Agricultural economics, . . . . .	694 65
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Agricultural education, . . . . .	622 15
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Rural sociology, . . . . .	248 81
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Textbooks, . . . . .	1,733 59
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Trophy room, . . . . .	1,564 74
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Total, . . . . .	\$499,087 97
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<sup>1</sup> Not received on time.

*Experiment Station Buildings (Estimated Value).*

	Inventory at Beginning of Year.	Per Cent.	Cost at Beginning of Year less Per Cent. De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Year.
Agricultural laboratory, . . . .	\$14,966 50	2	\$14,667 17	\$37 32	\$14,704 49
Agricultural barns, . . . .	4,777 47	3	4,634 15	50 50	4,684 65
Agricultural farmhouse, . . . .	1,412 47	3	1,370 10	5 30	1,375 40
Agricultural glass house, . . . .	451 25	5	428 69	-	428 69
Cranberry buildings, . . . .	2,490 00	5	2,365 50	-	2,365 50
Plant and animal chemistry laboratory, . . . .	29,160 71	2	28,577 50	82 11	28,659 61
Plant and animal chemistry barns, . . . .	3,920 98	3	3,803 35	161 64	3,964 99
Plant and animal chemistry dairy, . . . .	1,881 80	3	1,825 35	-	1,825 35
Six poultry houses, . . . .	576 24	2	564 72	21 00	585 72
Entomological glass houses, . . . .	744 56	5	707 33	75 00	782 33
Totals, . . . .	\$60,381 98	-	\$58,943 86	\$432 87	\$59,376 73

*Experiment Station Equipment (Estimated Value).*

Agricultural economics department, . . . .	\$57 14
Agricultural laboratory, . . . .	7,310 93
Botanical laboratory, . . . .	5,471 09
Chemical laboratory, . . . .	22,161 01
Cranberry station, . . . .	16,314 52
Director's office, . . . .	5,696 64
Entomological laboratory, . . . .	23,550 24
Horticultural laboratory, . . . .	4,707 63
Meteorology laboratory, . . . .	855 00
Microbiology laboratory, . . . .	1,479 55
Poultry department, . . . .	4,517 78
Treasurer's office, . . . .	1,130 25
Tillson farm, . . . .	451 75
Graves' orchard, . . . .	45 00
Total, . . . .	\$93,748 53

*Inventory Summary.*

Land, . . . .	\$122,718 58
College buildings, . . . .	940,012 68
College equipment, . . . .	499,087 97
Experiment station buildings, . . . .	59,376 73
Experiment station equipment, . . . .	93,748 53

Total, . . . . \$1,714,944 49

Acres.

College estate, area, . . . .	567.79
Cranberry station, Wareham, area, . . . .	23.67
Market-garden field station, Lexington, area, . . . .	12.00
Mount Toby demonstration forest, area, . . . .	755.27
Rifle range, . . . .	46.2
Pelham quarry, . . . .	.5

Total acreage, . . . . 1,405.43

## STUDENT'S TRUST FUND ACCOUNT.

	Disburse- ments, Year ending Nov. 30, 1917.	Receipts, Year ending Nov. 30, 1917.	Balance on Hand.	Balance brought for- ward Dec. 1, 1916.
Athletics, . . . . .	\$5,928 80	\$6,415 72	\$2,291 43	\$1,804 51
Dining hall, . . . . .	52,349 19	47,140 28	—17,214 10	—12,005 19
Keys, . . . . .	56 50	54 50	33 75	35 75
Student deposits, . . . . .	16,298 18	18,569 49	10,328 55	8,057 24
Social union, . . . . .	947 48	962 94	949 86	934 40
Textbooks, . . . . .	5,443 08	5,039 27	778 06	1,181 87
Athletic field, . . . . .	1,675 98	1,554 99	—373 21	—252 22
Uniforms, . . . . .	2,710 15	2,215 15	1,928 64	2,423 64
Totals, . . . . .	\$85,409 36	\$81,952 34	—\$1,277 02	\$2,180 00
Balance on hand Dec. 1, 1916, . . . . .	—	2,180 00	—	—
Balance on hand Nov. 30, 1917, . . . . .	—1,277 02	—	—	—
	\$84,132 34	\$84,132 34	—	—

## CONDENSED OPERATING STATEMENT OF THE DINING HALL.

	Operating charges.	Income.
<b>1916.</b>		
Dec. 1. Balance, . . . . .	\$12,005 19	
<b>1917.</b>		
Nov. 30. Total disbursements, . . . . .	52,349 19	
Outstanding bills, . . . . .	2,116 27	
Total collections, . . . . .		\$47,140 28
Accounts outstanding, . . . . .		432 46
Inventory, . . . . .		4,798 75
Balance, . . . . .		14,099 16
	\$66,470 65	\$66,470 65

ENDOWMENT FUND.<sup>1</sup>

	Principal.	Income.
United States grant (5 per cent.), . . . . .	\$219,000 00	\$7,300 00
Commonwealth grant (3½ per cent.), . . . . .	142,000 00	3,313 32
	—	\$10,613 32

<sup>1</sup> This fund is in the hands of the State Treasurer, and the Massachusetts Agricultural College receives two-thirds of the income from the same.

## BURNHAM EMERGENCY FUND.

	Market Value Dec. 1, 1917.	Par Value.	Income.
Two bonds American Telephone and Telegraph Company 4s, at \$830, . . . . .	\$1,660 00	\$2,000 00	\$80 00
Two bonds Western Electric Company 5s, at \$971, . . . . .	1,942 00	2,000 00	100 00
	\$3,602 00	\$4,000 00	\$180 00
Unexpended balance Dec. 1, 1916, . . . . .	-	-	500 55
Cash on hand Nov. 30, 1917, . . . . .	-	-	\$680 55

## LIBRARY FUND.

Five bonds New York Central & Hudson River Railroad Company 4s, at \$768.75, . . . . .	\$3,843 75	\$5,000 00	\$200 00
Five bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$850, . . . . .	4,250 00	5,000 00	200 00
Two shares New York Central & Hudson River Railroad Company stock, at \$680, . . . . .	1,360 00	200 00	10 00
Amherst Savings Bank, deposit, . . . . .	167 77	167 77	7 09
	\$9,621 52	\$10,367 77	\$417 09
Nov. 20, 1917, transferred to college library account, . . . . .	-	-	417 09

## SPECIAL FUNDS.

*Endowed Labor Fund (the Gift of a Friend of the College).*

Two bonds American Telephone and Telegraph Company 4s, at \$830, . . . . .	\$1,660 00	\$2,000 00	\$80 00
Two bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$850, . . . . .	1,700 00	2,000 00	80 00
One bond New York Central Railroad debenture 4s, . . . . .	786 33	1,000 00	40 00
Amherst Savings Bank, deposit, . . . . .	143 39	143 39	6 07
One bond Kansas City Street Railway 5½s, . . . . .	980 00	1,000 00	55 00
	\$5,269 72	\$6,143 39	\$261 07
Unexpended balance Dec. 1, 1916, . . . . .	-	-	537 04
Cash on hand Nov. 30, 1917, . . . . .	-	-	\$798 11

*Whiting Street Scholarship Fund.*

One bond New York Central debenture 4s, . . . . .	\$786 33	\$1,000 00	\$40 00
Amherst Savings Bank, deposit, . . . . .	271 64	271 64	11 51
	\$1,057 97	\$1,271 64	\$51 51
Unexpended balance Dec. 1, 1916, . . . . .	-	-	239 18
Cash on hand Nov. 30, 1917, . . . . .	-	-	\$290 69



SPECIAL FUNDS — *Continued.**Hills Fund.*

	Market Value Dec. 1, 1917.	Par Value.	Income.
One bond American Telephone and Telegraph Company 4s, at	\$830 00	\$1,000 00	\$40 00
One bond New York Central & Hudson River Railroad debenture 4s, at	786 33	1,000 00	40 00
One bond New York Central Railroad debenture 4s,	786 33	1,000 00	40 00
Three bonds Pacific Telephone and Telegraph Company 5s, at \$920,	2,760 00	3,000 00	150 00
One bond Western Electric Company 5s, at	971 00	1,000 00	50 00
Boston & Albany Railroad stocks, 3¼ shares, at \$126,	456 75	362 50	31 68
Amherst Savings Bank, deposit,	72 75	72 75	3 06
Electric Securities Company bonds, 1% shares, at \$965,	1,138 70	1,180 00	59 00
Kansas City Street Railway 5½,	980 00	2,000 00	110 00
	\$8,781 86	\$10,615 25	\$523 74
Unexpended balance Dec. 1, 1916,	—	—	1,380 41
Disbursements for fiscal year ending Nov. 30, 1917,	—	—	\$1,904 15
	—	—	1,013 00
Cash on hand Nov. 30, 1917,	—	—	\$891 15

*Mary Robinson Fund.*

Amherst Savings Bank, deposit,	\$142 00	\$142 00	\$6 03
Boston & Albany Railroad stock, ¾ share, at \$126,	47 25	38 00	3 32
Electric Securities Company bonds, 4½% share, at \$965,	791 30	820 00	41 00
	\$980 55	\$1,000 00	\$50 35
Unexpended balance Dec. 1, 1916,	—	—	138 68
Cash on hand Nov. 30, 1917,	—	—	\$189 03

*Grinnell Prize Fund.*

Ten shares New York Central & Hudson River Railroad stock, at \$69,	\$690 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1916,	—	—	195 74
	\$690 00	\$1,000 00	\$245 74
Disbursements for prizes,	—	—	—
Cash on hand Nov. 30, 1917,	—	—	\$245 74

*Gassett Scholarship Fund.*

One bond New York Central & Hudson River Railroad debenture 4s,	\$786 33	\$1,000 00	\$40 00
Amherst Savings Bank, deposit,	11 64	11 64	46
	\$797 97	\$1,011 64	\$40 46
Unexpended balance Dec. 1, 1916,	—	—	182 77
Cash on hand Nov. 30, 1917,	—	—	\$223 23

SPECIAL FUNDS — *Concluded.**Massachusetts Agricultural College (Investment).*

	Market Value Dec. 1, 1917.	Par Value.	Income.
One share New York Central & Hudson River Railroad stock,	\$69 00	\$100 00	\$5 00
Unexpended balance Dec. 1, 1916, . . . . .	-	-	80 45
Cash on hand Nov. 30, 1917, . . . . .	-	-	\$85 45

*Danforth Keyes Bangs Fund.*

Two bonds Pacific Telephone and Telegraph Company 5s, at \$920,	\$1,840 00	\$2,000 00	\$100 00
Two bonds Union Electric Light and Power Company 5s, at \$930,	1,860 00	2,000 00	100 00
Two bonds American Telephone and Telegraph Company 4s, at \$830,	1,660 00	2,000 00	80 00
Interest from student loans, . . . . .	-	-	44 88
	\$5,360 00	\$6,000 00	\$324 88
Unexpended balance Dec. 1, 1916, . . . . .	-	-	1,000 25
	-	-	\$1,325 13
Total loans made to students during fiscal year, . . . . . \$1,794 00			
Cash received on account of student loans, . . . . . 1,669 00			
Excess of loans made over accounts paid by students, . . . . .	-	-	125 00
Cash on hand Nov. 30, 1917, . . . . .	-	-	\$1,200 13

*John C. Cutter Fund.*

One bond Pacific Telephone and Telegraph Company 5s,	\$920 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1916, . . . . .	-	-	68 17
	\$920 00	\$1,000 00	\$118 17
Disbursements for fiscal year to date, . . . . .	-	-	22 64
Cash on hand Nov. 30, 1917, . . . . .	-	-	\$95 53

*William R. Sessions Fund.*

One bond New York Central & Hudson River Railroad stock 6s, . . . . .	\$465 00	\$500 00	\$30 00
Amherst Savings Bank, deposit, . . . . .	4,500 00	4,500 00	191 25
	\$4,965 00	\$5,000 00	\$221 25
Disbursements for fiscal year to date, . . . . .	-	-	46 10
	-	-	\$175 15
Cash on hand Nov. 30, 1916, . . . . .	-	-	100 56
Cash on hand Nov. 30, 1917, . . . . .	-	-	\$275 71

*Alvord Dairy Scholarship Fund.*

Amherst Savings Bank, deposit, . . . . .	\$4,000 00	\$4,000 00	\$170 00
Overdraft Dec. 1, 1916, . . . . . \$430 00	-	-	-
Less amount of receipts, . . . . . 170 00	-	-	-
Overdraft Nov. 30, 1917, . . . . .	-	-	\$260 00

SUMMARY OF BALANCES ON HAND OF THE INCOME FROM FUNDS HELD IN  
TRUST BY THE MASSACHUSETTS AGRICULTURAL COLLEGE.

Burnham emergency fund, . . . . .	\$680 55
Endowed labor fund, . . . . .	798 11
Whiting Street scholarship fund, . . . . .	290 69
Hills fund, . . . . .	891 15
Mary Robinson fund, . . . . .	189 03
Grinnell prize fund, . . . . .	245 74
Gassett scholarship fund, . . . . .	223 23
Massachusetts Agricultural College investment fund, . . . . .	85 45
Danforth Keyes Bangs fund, . . . . .	1,200 13
John C. Cutter fund, . . . . .	95 53
William R. Sessions fund, . . . . .	275 71
	<hr/>
	\$4,975 32
Alvord dairy scholarship fund overdraft, . . . . .	260 00
	<hr/>
	\$4,715 32
Angus land, . . . . .	\$800 00
Liberty Loan, . . . . .	800 00
	<hr/>
	1,600 00
	<hr/>
	\$3,115 32

I hereby certify that I have this day examined the Massachusetts Agricultural College account, as reported by the Treasurer, Fred C. Kenney, for the year ending Nov. 30, 1917. All bonds and investments are as represented in the treasurer's report. All disbursements are properly vouched for, and all cash balances are found to be correct.

CHARLES A. GLEASON,  
*Auditor.*

DEC. 19, 1917.

HISTORY OF SPECIAL FUNDS.

Burnham emergency fund: —

A bequest of \$5,000 from T. O. H. P. Burnham of Boston, made without any conditions. The trustees of the college directed that \$1,000 of this fund should be used in the purchase of the Newell land and Goessmann library.

The fund now shows an investment of . . . . . \$4,000 00

Library fund: —

The library of the college at the present time contains 56,090 volumes. The income from the fund raised by the alumni and others is devoted to its increase, and additions are made from time to time as the needs of the different departments require. Dec. 27, 1883, William Knowlton gave \$2,000; Jan. 1, 1894, Charles L. Flint gave \$1,000; in 1887, Elizur Smith of Lee, Mass., gave \$1,315. These were the largest bequests, and now amount to . . . . .

10,000 00

## Endowed labor fund: —

Gift of a friend of the college in 1901, income of which is to be used for the assistance of needy and deserving students, . . . . . \$5,000 00

## Whiting Street scholarship fund: —

Gift of Whiting Street of Northampton, for no special purpose, but to be invested and the income used. This fund is now used exclusively for scholarship, . . . . . 1,000 00

## Hills fund: —

Gift of Leonard M. and Henry F. Hills of Amherst, Mass., in 1867, to establish and maintain a botanic garden, . . 10,000 00

## Mary Robinson fund: —

Gift of Miss Mary Robinson of Medfield, in 1874, for scholarship, . . . . . 1,000 00

## Grinnell prize fund: —

Gift of Hon. Wm. Claflin, to be known as the Grinnell agricultural prize, to be given to the two members of the graduating class who may pass the best oral and written examination in theory and practice of agriculture, given in honor of George B. Grinnell of New York, . . . . . 1,000 00

## Gassett scholarship fund: —

Gift of Henry Gassett of Boston, the income to be used for scholarship, . . . . . 1,000 00

## Massachusetts Agricultural College investment fund: —

Investment made by vote of trustees in 1893 to purchase one share of New York Central & Hudson River Railroad stock. The income from this fund has been allowed to accumulate, . . . . . 100 00

## Danforth Keyes Bangs fund: —

Gift of Louisa A. Baker of Amherst, Mass., April 14, 1909, the income thereof to be used annually in aiding poor, industrious and deserving students to obtain an education in said college, . . . . . 6,000 00

## John C. Cutter fund: —

Gift of Dr. John C. Cutter of Worcester, Mass., an alumnus of the college, who died in August, 1909, to be invested by the trustees, and the income to be annually used for the purchase of books on hygiene, . . . . . 1,000 00

## Alvord dairy scholarship fund: —

Gift of Henry E. Alvord, who was the first instructor in military tactics, 1869-71, and a professor of agriculture, 1885-87, at this institution. The income of this fund is to be applied to the support of any worthy student of said college, graduate or post-graduate, who may be making a specialty of the study of dairy husbandry (broadly considered), with the intention of becoming an investigator,



teacher or special practitioner in connection with the dairy industry, provided that no benefits arising from such fund shall at any time be applied to any person who then uses tobacco in any form or fermented or spirituous beverages, or is known to have done so within one year next preceding, . . . . . \$4,000 00

William R. Sessions fund: —

In accordance with the request of my deceased wife, Clara Markham Sessions, made in her last will, I bequeath to the trustees of the Massachusetts Agricultural College, Amherst, Mass., the sum of \$5,000, it being the amount received by me from the estate of the said Clara Markham Sessions. The said \$5,000 to be kept by the said trustees a perpetual fund, the income from which shall be for the use of the Massachusetts Agricultural College; and according to the further request of my deceased wife, made in her last will, this is to be known as the William R. Sessions fund, and is to be a memorial of William R. Sessions; and it is my special request that the said trustees shall make record of the fact that this fund came from the estate of my deceased wife, Clara Markham Sessions, in accordance with her request made in her last will, . . . 5,000 00

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\$49,100 00

FRED C. KENNEY,  
*Treasurer.*









# THE M. A. C. BULLETIN

AMHERST, MASS.

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February, 1919

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No. 31

FIFTY-SIXTH ANNUAL REPORT

OF THE

## MASSACHUSETTS AGRICULTURAL COLLEGE

PART I

REPORT OF THE PRESIDENT AND OTHER OFFICERS  
OF ADMINISTRATION

FOR FISCAL YEAR ENDED NOV. 30, 1918

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FIFTY-SIXTH ANNUAL REPORT

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AGRICULTURAL COLLEGE

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PART I

REPORT OF THE PRESIDENT AND OTHER OFFICERS OF ADMINISTRATION  
FOR FISCAL YEAR ENDED NOVEMBER 30, 1918



FEBRUARY, 1919

PUBLICATION OF THIS DOCUMENT  
APPROVED BY THE  
SUPERVISOR OF ADMINISTRATION.



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# The Commonwealth of Massachusetts.

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MASSACHUSETTS AGRICULTURAL COLLEGE,  
AMHERST, Nov. 30, 1918.

To His Excellency SAMUEL W. McCALL.

SIR: — On behalf of the trustees of the Massachusetts Agricultural College I have the honor to transmit herewith, to Your Excellency and the Honorable Council, Part I of the fifty-sixth annual report of the trustees, for the fiscal year ended Nov. 30, 1918, this being the report of the president of the college and other officers of administration to the corporation.

I am, very respectfully, your obedient servant,

KENYON L. BUTTERFIELD,  
*President.*





## REPORT OF THE PRESIDENT OF THE COLLEGE.

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*Gentlemen of the Corporation.*

I herewith submit my annual report as president of the Massachusetts Agricultural College for the year ending Nov. 30, 1918, and with it transmit reports from other administrative officers of the institution.

### **THE MASSACHUSETTS AGRICULTURAL COLLEGE AND THE WAR.**

In common with many other institutions, our college work has, on account of the war, been materially affected during the past year. The college year 1917-18 was reduced in length to three terms of nine weeks each. It was thought that under the circumstances substantially all of the work normally given in twelve weeks could be crowded into the shorter terms. This did not prove to be the case, however, and partly because of this shortening and partly because of the general unrest which affected college men all over the country, the academic work of the year was not entirely satisfactory.

The present college year opened at the normal time, September 25, and it was our intention to shorten the year by two weeks only. The cessation of the war, however, has so altered the situation that we will resume the normal schedule of three terms of twelve weeks each.

### **Students' Army Training Corps.**

On May 8, 1918, the War Department announced its plan for establishing a Students' Army Training Corps in practically every American college. This plan provided for the enlistment in the army of boys from eighteen to twenty-one years old, and their assignment to colleges for one, two or three years' work, and, under certain conditions, for even a longer period. The purpose of this plan was to maintain the normal attendance at

the colleges, and at the same time to train men for officers and for certain expert service in the army.

The modification of the selective service law in August, whereby the draft age was lowered to eighteen, would have depleted almost to the last man the attendance at the men's colleges. The provisions of the S. A. T. C. were immediately adjusted to meet the new situation. Our institution accepted the opportunity to operate under these provisions. These conditions may briefly be stated as follows: men formerly enrolled in the college, and those between the ages of eighteen and twenty-one who were able to meet the entrance requirements, were allowed to enter college as usual in the autumn. These men were inducted into the army as regular soldiers, and as such received the pay of privates, namely, \$30 per month, and were clothed, housed, fed and trained at government expense. A contract was made with the institution for the housing, feeding and medical care of the men. The War Department furnished the necessary military staff. These soldiers were required to take military drill and certain academic subjects prescribed by the War Department. Such time as remained was to be utilized by the soldiers in the pursuance of such academic courses as they should choose.

At the outset we were given to understand that boys twenty years of age would probably be allowed to remain in the college three months; nineteen years of age, six months; and eighteen years of age, nine months. The plan further contemplated distributing members of the S. A. T. C. at the end of each three months' period; their military and scholastic records would be examined, and, on the basis of these joint records, one of three things would be done with the man: (1) he would be sent to an officers' training school; (2) he would be allowed to remain at the college for further technical training; and (3) if he had shown no special aptitude, either for military work or for the technical training desired in the army, he would be sent to a depot brigade as a private. Men thus transferred from the college were to be replaced by detachments assigned from depot brigades, who would be chosen as being qualified to benefit by three months' training at the college. The vacancies could also be filled by high school boys completing their course during the

year. The plan further contemplated keeping the college open during the entire year.

The final regulations by the War Department allowed us to admit men who had completed fourteen units of high school work in any subject. On this basis a number of men were admitted to the S. A. T. C. who would not have been admitted as regular students.

The S. A. T. C. was formally established Oct. 1, 1918. We originally asked to be allowed to enroll 350 men, but when the applications exceeded this number our quota was increased to 400; the total enlistment was 351, with 12 others taking the work as civilians.

Early in October, by direction of the War Department, the best qualified members of the S. A. T. C. were transferred to officers' training schools, and prior to November 12, 60 of these men were thus transferred. No other men, however, were assigned to take their places.

With the signing of the armistice on November 11 the plans for the S. A. T. C. were immediately interrupted. Finally, on November 27, it was announced that the S. A. T. C. would be disbanded not later than Dec. 21, 1918.

Under the requirements of the S. A. T. C. certain educational experiments were undertaken, some of which seemed to represent the foundation of beneficial reforms in educational methods. Sufficient opportunity, however, has not been given for the adequate testing of these methods.

In harmony with the expressed wish of the War Department, that soldiers be housed under conditions approximating as nearly as possible the barracks arrangement at cantonments, we have utilized the dormitory rooms in North and South College, housing five to seven men in suites formerly occupied by two or three men. To supplement these accommodations we have used certain rooms in French Hall and in Draper Hall. The soldiers have been fed at Draper Hall.

This institution has been especially fortunate in the personnel of the military staff which was assigned for the training of our soldiers. Too high praise cannot be given to the entire staff for their enthusiasm, efficiency and qualities of leadership. The staff consists of the following: Col. R. H. Wilson (retired),



Capt. G. E. Rifenbark, Lieut. Curry S. Hicks (personnel officer), W. E. S. Dickerson, E. J. Costello, L. L. Cunningham, F. Dehls, D. C. Chalmers, J. T. Dave and Sergt. J. J. Lee (retired).

### War Work of the Institution.

The institution has continued during the year its policy of co-operating with State and Federal agencies in the war program of food supply, distribution and conservation. A large part of our war work is performed through the extension service, and in co-operation with the county farm bureaus. With a farm bureau in each agricultural county, and with our staff of agricultural experts continually in the field, the service both to the producer and consumer of food has been inestimable. In the summer of 1918, for the second season, the regular teaching staff of the institution did a vast deal of additional work. It is difficult to totally enumerate the service thus rendered. Men gave up their vacations, and in many instances took up work outside of their normal field of teaching. It is not possible to give sufficient credit to the individual members of our staff, who have, during the war, played the part of soldiers, and have worked to the limit of their time and strength.

During the summer of 1918, also, a very large percentage of our students engaged in farm work, or were employed in munition factories or in the production of other war supplies.

### The Students and Alumni in Military Service.

The number of students and alumni in war service, according to our latest records, is represented by the following table:—

	Total in Service. <sup>1</sup>	S. A. T. C.	Com-missioned Officers.	Overseas.	Deaths.
Faculty, . . . . .	18	—	7	3	—
Graduate students, . . . . .	12	—	1	2	1
Total, . . . . .	30	—	8	5	1
Class.					
1878, . . . . .	1	—	1	—	—
1882, . . . . .	2	—	2	1	—
1885, . . . . .	2	—	2	1	—
1890, . . . . .	1	—	1	—	—

<sup>1</sup> Includes Red Cross and Y. M. C. A. officials.



	Total in Service.	S. A. T. C.	Com- missioned Officers.	Overseas.	Deaths.
<i>Class—Concluded.</i>					
1891, . . . . .	1	—	—	1	—
1892, . . . . .	1	—	—	1	—
1894, . . . . .	1	—	1	—	—
1895, . . . . .	2	—	1	2	—
1897, . . . . .	4	—	4	3	—
1898, . . . . .	1	—	—	—	—
1900, . . . . .	2	—	1	1	—
1901, . . . . .	1	—	—	—	—
1903, . . . . .	2	—	2	1	—
1905, . . . . .	2	—	2	1	—
1906, . . . . .	5	—	3	2	—
1907, . . . . .	4	—	3	2	—
1908, . . . . .	6	—	5	3	—
1909, . . . . .	6	—	1	4	—
1910, . . . . .	12	—	6	3	1
1911, . . . . .	15	—	5	8	1
1912, . . . . .	36	—	17	15	—
1913, . . . . .	37	—	18	16	4
1914, . . . . .	54	—	17	24	2
1915, . . . . .	65	—	21	25	—
1916, . . . . .	96	—	25	35	—
1917, . . . . .	128	—	40	46	5
1918, . . . . .	128	—	57	56	5
1919, . . . . .	119 <sup>1</sup>	20	29	40	6
1920, . . . . .	110 <sup>1</sup>	47	12	19	3
1921, . . . . .	77 <sup>1</sup>	66	4	—	—
1922, . . . . .	78 <sup>1</sup>	79	—	—	—
Unclassified, . . . . .	38 <sup>1</sup>	14	3	11	3
Total, . . . . .	1,067	226	291	326	31

<sup>1</sup> Includes S. A. T. C. men enrolled as regular students.

It is indeed an inspiration to realize that over 1,000 "Aggie" men, chiefly young men of classes of the last ten years, have made such a definite contribution to the winning of the war. The percentage of commissioned officers is most creditable. The reports which come to us of the individual conduct of our men in the war reflect the highest credit upon them. Almost

without exception our men have acquitted themselves admirably, and in many cases have won military distinction.

It is with a feeling of sadness, but at the same time of pride, that we think of our men who have gone into this great struggle never to return. Up to the present time 31 graduates and former students of the college have given their lives in the war; 22 of these have died in France, either in action or as the result of wounds; 3 have been killed in aviation camps in America; and 6 have succumbed to disease. I think it will be appropriate for the college at some date in the near future to recognize the supreme sacrifice made by these men by a proper memorial service, and certainly by an adequate memorial which will permanently express our appreciation of their loyalty and patriotism.

#### **War Records.**

Careful records of the M. A. C. men in war service have been kept by the secretary of the college, and in October a bulletin was issued giving the names, class, home address and military address and rank of all men in the service on date of September 1 whose records had been received. The total at that time was 731, with 221 commissioned officers and 274 men overseas. It is planned to prepare during the coming year a more complete list of these men, and also to bring together in one volume other historical data bearing upon the contribution which our institution has made in this world struggle.

#### **Depletion of the Staff.**

As was to be expected our staff has been further depleted during the year by the younger men leaving for war service. The names of men who are on leave of absence for this purpose are found in Table IV at the end of this report. A few other men have resigned their positions in order that they may enter military service.

#### **Welfare Work.**

When the campaign for the combined war charities was organized in November of this year our students and faculty alike responded most generously. The total contribution of 379 students, including S. A. T. C. men and regular students, was

over \$4,000. Practically every student made a contribution. The total raised in the institution, including the faculty, clerks and laborers, was \$7,575.

As soon as it was known that a detachment of soldiers would be stationed here a faculty committee was appointed to undertake such welfare work in behalf of the soldiers as should be required. Working in co-operation with this committee the International Y. M. C. A. has placed on the campus a competent secretary who has done much to assist the soldiers and regular students. The Social Union Room in North College has been placed at the disposal of the committee, and has been utilized as Y. M. C. A. headquarters.

## REVIEW OF THE YEAR.

### REGULAR STUDENTS.

In addition to the 363 soldiers who were enrolled, and who were composed of men who would normally be classified as seniors, juniors, sophomores, freshmen and unclassified students, we had at the beginning of the collegiate year 97 regular and 19 unclassified students pursuing normal college work. Twenty-nine women students were included in the above, and the remainder were boys under eighteen years of age, a few who had been rejected from military training on account of physical disability, and a few who were eligible to continue their college work for other reasons. There were 7 men and 3 women enrolled in the graduate school. Because of the small enrollment in the upper two classes it was not thought expedient to continue the major system on the normal basis; two majors were therefore offered, — one embodying the subjects formerly offered in the divisions of agriculture, horticulture and the department of agricultural economics, and the other, a combined major in science. The work offered the freshmen and sophomores was only slightly changed from the usual schedule.

The college rented the Kappa Sigma and Phi Sigma Kappa fraternity houses for use as dormitories for the girls. The interests of the other fraternity houses were pooled, and the houses have been used as far as has been possible for the accommodation of men students outside of the S. A. T. C.

A comparative analysis of this year's attendance is found in Table VI.

### FUEL SHORTAGE.

The college, in common with other institutions both public and private, was affected by the fuel shortage of the winter of 1918. Early in January, when the situation was most critical, the Bowker Auditorium, Wilder Hall and the Mathematics Building were closed. While considerable inconvenience to instructors and students was thus caused, all co-operated heartily in meeting the emergency.



## THE INFLUENZA EPIDEMIC.

Full induction of the S. A. T. C. was delayed because of the prevailing influenza epidemic. It was deemed advisable to cancel all large gatherings, and for a period of over four weeks no classes were held for the soldiers, their time being employed in out-of-door drilling. Draper Hall was reserved temporarily for hospital quarters, but fortunately it was not necessary to make this use of the building. Strict rules relative to quarantine were enforced. The State Department of Health congratulated the college "for the admirable way in which the situation was handled, and your remarkable showing for health." About 25 cases of influenza were reported among the students and soldiers; none of them, however, were serious. At the present time the second wave of the influenza, which was predicted by physicians, has come, and a number of cases have occurred.

Two members of our regular staff and the herdsman at the barn succumbed to this disease. Mr. Stuart C. Vinal, assistant in entomology in the experiment station, contracted the disease while on duty in the vicinity of Boston, and died September 26. Mr. Vinal was a graduate of this college in the class of 1915, and had pursued advanced study in entomology. He had been employed by the experiment station ever since graduation, first as part-time assistant, and since September, 1917, as assistant entomologist. He was regarded as a young investigator of unusual promise.

Mr. John J. Barber, the farm superintendent, after a severe illness of about two weeks, died October 3. Mr. Barber had served most acceptably as farm superintendent for nearly six years. As a competent farmer, a skillful manager of men and a genial companion his loss is keenly felt.

Mr. Maurice Calif, herdsman at the barn, contracted the disease, and after a brief illness of three days died on November 19.

## NEW DEPARTMENTS.

During the year two new departments have been established. The department of horticultural manufactures has been contemplated and urged for many years; the war has emphasized the need of such a department, and formal recognition has been

now given to this work by the election of Walter W. Chenoweth, formerly associate professor of pomology, as head of the department of horticultural manufactures. No adequate facilities are as yet available for the proper conduct of the work of this department. At present the activities are carried on at the cold-storage plant, the dairy building and one of the sheds attached to the horticultural barn, while the office of the head of the department is located at Wilder Hall. It is hoped that at a not far distant date a suitable building for teaching and investigations in horticultural manufactures may be provided. A vast amount of extension work has been done in this subject, and the demand will without doubt continue.

Although funds were not appropriated by the last Legislature for the construction of a women's building, and for the adequate maintenance of a women's department, it was the unanimous opinion of the trustees that the college could not longer disregard the demand made upon it for instruction in home economics and allied subjects for women. Accordingly Miss Edna L. Skinner has been elected professor of home economics, and will take up her duties Jan. 1, 1919; she will also serve as adviser of women students. Miss Skinner comes with a training and experience which admirably qualify her to undertake her important task here. She is a graduate of the Michigan State Normal School, and has specialized in home economics at Columbia University, from which institution she has a degree. She has taught household arts at Columbia for four years, has been director of household science at James Millikin University for five years, and during the past year has been teaching at Pine Manor, Wellesley, Mass.

#### RESIGNATION OF DR. GATES.

Prof. Burton N. Gates, head of the department of beekeeping since 1910, resigned at the beginning of the present college year to accept a similar position at the Ontario Agricultural College.

#### DEATH OF MR. HOSMER.

On May 28 Hon. Frank A. Hosmer of our Board of Trustees passed away very suddenly. The following resolutions were presented and adopted at the special meeting of the trustees held October 2: —

## IN MEMORIAM.

Frank Alvan Hosmer, member of this Board since January, 1911, died at his home in Amherst on the twenty-seventh day of May last.

Born Nov. 14, 1853, in Woburn, and educated in its public schools, he entered Amherst College in 1871, was graduated there in 1875, and in 1878 received its M.A. degree for postgraduate work in history and political science.

After graduation he taught in the schools of Woburn, Brimfield and Palmer, and from 1879 to 1888 he held the dual positions of principal of the high school and superintendent of schools in Great Barrington. From 1888 to 1890 he was editor and publisher of the "Berkshire Courier" in Great Barrington, and a correspondent of the "New York Herald."

For ten years, from 1890 to 1900, Mr. Hosmer was president of Oahu College at Honolulu, where he became prominent in social and civic affairs and sanitary problems, and in political activities that culminated in the establishment of Hawaii as a territory of the United States. He returned to the States in 1900, and after visiting England and France, settled in Amherst in 1901.

During the last eighteen years he has served loyally and well his town, State and country — for the common interests of the community in which he lived — in many lines of public and community service, and particularly in these later days he had devoted his energies without stint to activities in support of the world-wide war for humanity.

Mr. Hosmer represented the Third Hampshire District in the General Court of 1908 and 1909, was appointed by Governor Draper in December, 1910, a member of this Board, and reappointed by Governor McCall January last for another term.

Here he has served continuously, and with diligence and faithfulness unsurpassed, upon the trustee committees on finance, course of study and faculty, and on legislation, of which committee, during the last years of his service, he was chairman.

He has always shown a broad, liberal and sympathetic spirit in construing the objects and upholding the standards of the college, and in striving to make those objects and standards effective through the work of its various departments.

He was cordial and sympathetic toward all. He laid hold on opportunity gladly, accepted responsibility cheerfully, and undertook manfully whatever work or duty came to his hand, until in a night he was taken, after a life filled to its last day with the purpose and privilege of high calls to service, bravely met and faithfully answered; be it therefore

*Resolved*, That this memorial be inscribed upon the records of the Board; and that a copy hereof be sent to his beloved wife, to whom we offer our deepest sympathy.



Mr. Hosmer's place on the Board of Trustees was filled by the appointment by Governor McCall of Mr. Carleton D. Richardson of West Brookfield, who brings to his service on the Board the experience of a successful farmer, and a leadership in agriculture represented by his distinguished service as master of the State grange and in various other public capacities.

#### COMMENCEMENT.

Owing to the fact that so many members of the class who would have graduated in 1918 were absent in war service, it was thought advisable to arrange a simple and yet dignified commencement program. The date set for this occasion was Saturday, April 27. Commencement was held in the forenoon at Bowker Auditorium. President George C. Creelman of the Ontario Agricultural College gave an interesting address on "The Duty of the Trained Agriculturist in the Present Crisis and After." Brief remarks were made by Lieutenant-Governor Calvin Coolidge, and the degrees were awarded by the president. Following these exercises an informal reception was held for the seniors and their friends, and a luncheon was given at the dining hall to 150 seniors, guests and faculty members. Altogether, it was felt that the plans as carried out met the situation admirably. There were 42 seniors present to receive their degrees in person; 3 of this number were women. In addition, 12 degrees were awarded to members of the class who had attended the institution during the year but were at that time absent on war service.

#### RESIGNATION OF DR. BROOKS.

On account of ill health Dr. William P. Brooks, director of the experiment station, was granted a leave of absence on March 1, 1918; subsequently he resigned as director of the experiment station. His resignation was accepted by the trustees to take effect October 1, but he is retained as consulting agriculturist of the experiment station. January, 1919, will be the thirtieth anniversary of Dr. Brooks' service as professor of agriculture, and agriculturist for the experiment station; for twelve years he has been director of the experiment station, and



for one and one-half years, was acting president of the college. The following resolution was adopted by the trustees in appreciation of this long and effective service: —

The trustees of the Massachusetts Agricultural College, having received the resignation of Dr. William P. Brooks as director of the experiment station, after a service to the college as professor of agriculture, acting president and director of the experiment station, covering a period of almost thirty years, and having accepted the same, the members of the Board wish to express their appreciation of his long and faithful service to the college, and hope that he may be able to complete the compilation and publication of the results of the experimental work which he has carried on for so many years.

#### LEGISLATIVE APPROPRIATIONS.

The Legislature of 1918 was requested to appropriate \$136,845 for improvements at the power plant and at the dining hall, and for other improvements and for equipment; \$28,500 for further improvements at and maintenance of the market-garden field station; and \$100,000 for a women's building and the maintenance of women's work. The amounts granted were as follows: —

Improvements at dining hall, . . . . .	\$12,000
Improvements at power plant, . . . . .	54,500
Improvements and equipment, . . . . .	20,000
Improvements at and maintenance of market-garden field station, . . . . .	16,500

#### IMPROVEMENTS AND NEW CONSTRUCTION.

The Legislature granted \$54,500 for improvements to the power plant, and contracts have been let for a new turbine house, a new 300 kilowatt Curtis turbine and generating set, and new equipment for handling coal with a mechanical stoker; this will reduce the labor costs at the power plant to the minimum. A new smokestack, 160 feet from the base to the top, and having an interior diameter of 7 feet, has also been constructed. The Legislature also granted \$12,000 for improvements to the dining hall; these have been practically completed, and include a new refrigerating plant with six compartments, and a new storage for potatoes and coal.

## WOMEN AT COLLEGE.

You will recall that there was presented to the last Legislature a bill asking for an appropriation of \$100,000 for women's work at the college, not over \$70,000 of which was to be used for a building to house the work in its earlier stages, the remaining amount to be used for salaries and maintenance. The Legislature referred the matter to the next General Court, and so we have had no funds to develop the work properly. We have, however, as stated previously, engaged a head of a department of home economics and also a woman agriculturist. There is little doubt but there will be a very large demand, both in short and long course work, for women trained in agriculture. There are other phases also of the food supply problem, such as home use of food and food conservation, in which women will find a normal field of work. Rural home making ought to be one of the main objectives of women's work at the college. For all this we will need dormitories, a staff of teachers and adequate maintenance.

## THE COLLEGE A STATE INSTITUTION.

The college authorities have contended constantly that the college is and always has been a State institution. However, when the constitutional amendment was passed providing that public funds should not go for the support of educational institutions not under public control, it seemed best to the trustees that a bill should be introduced which should set at rest any possible technical questions. The Commission on the Investigation of Agricultural Education held the same opinion. The Legislature made some important changes, and I think rather unfortunate changes, in the original bill. The resulting law is as follows: —

## CHAPTER 262, GENERAL ACTS OF 1918.

AN ACT TO DISSOLVE THE CORPORATION OF THE MASSACHUSETTS AGRICULTURAL COLLEGE AND TO PROVIDE FOR THE MAINTENANCE OF THE COLLEGE BY THE COMMONWEALTH.

*Be it enacted, etc., as follows:*

SECTION 1. The Massachusetts Agricultural College, incorporated by chapter two hundred and twenty of the acts of eighteen hundred and

sixty-three and acts in amendment thereof and in addition thereto, is hereby dissolved, and hereafter the college shall be maintained by the commonwealth as a state institution under the name of the Massachusetts Agricultural College. The commonwealth shall settle the affairs of the corporation, and shall be subject to its legal obligations and liable for its lawful debts.

SECTION 2. The present trustees of the said corporation shall be the trustees of the state institution, and shall hold office as such until the expiration of the several terms for which they were appointed, unless sooner removed. The power of appointment of their successors and the power of removal of trustees shall be exercised by the governor with the advice and consent of the council. An appointment to fill a vacancy occurring prior to the expiration of the term of a trustee shall be for the unexpired part of the term, and all other appointments shall be for the term of seven years. The governor, the commissioner of education, the secretary of the state board of agriculture, and the president of the faculty of the college shall be, ex-officiis, members of the board of trustees. The number of appointive trustees shall never exceed fourteen.

SECTION 3. The powers and duties heretofore conferred and imposed upon the trustees of the Massachusetts Agricultural College, are hereby conferred and imposed upon the trustees of the state institution, the Massachusetts Agricultural College, who shall manage and administer any grant or devise of land, and any gift or bequest of money or other personal property, made to the commonwealth for the use of said institution, and shall carry out said trusts, and shall invest the proceeds thereof in notes or bonds secured by good and sufficient mortgages or other securities. All property now held by the corporation, the Massachusetts Agricultural College, upon special trusts shall be managed and administered by said trustees in behalf of the commonwealth in accordance with the provisions of such special trusts.

SECTION 4. All expenditures for the maintenance of the institution shall be authorized by a majority of the trustees, or by a majority of a duly appointed committee of the trustees. Complete records and files of the pay rolls and bills shall be kept in the office of the treasurer. A complete accounting of all receipts and expenditures of the institution from all sources shall be made by the trustees to the governor annually. There shall be a complete audit of the accounts of the institution, including all receipts and expenditures, under the direction of the trustees at least twice a year, and also under the direction of the auditor of the commonwealth, whenever he may deem it proper. Monthly statements of receipts and expenditures shall be rendered by the treasurer to the auditor. The expenditure of special appropriations shall be under the direction and control of the trustees, and shall be accounted for in the same manner as appropriations for maintenance.

SECTION 5. All employees of the institution shall be considered state employees, but shall not be subject to the civil service laws and regulations.



SECTION 6. All acts and parts of acts which apply to the present Massachusetts Agricultural College shall continue in force and apply to the Massachusetts Agricultural College hereby created so far as they are not inconsistent with this act.

SECTION 7. This act shall take effect upon its passage. [*Approved May 31, 1918.*]

The auditing authorities at the State House are inclined to rule rather closely that under the new act all provisions for the conduct of State departments, boards and institutions strictly apply to the college. Doubtless the acts of the trustees, and particularly all the financial transactions of the college, should be subject to review. But we are now required to conform to practices and rules which were apparently never intended to apply to the college, and which, if rigorously enforced, make in our judgment for delay, annoyance and even inefficiency.

#### COUNTY FARM BUREAUS.

By reason also of the constitutional amendment, the county farm bureaus were required to reorganize as public agencies, two plans for which were discussed and presented to the Legislature. The one tied the county farm bureaus very closely to the extension system now administered by the college, and to the United States Department of Agriculture; the other made quite independent institutions out of each farm bureau. The latter policy finally prevailed. It is evident that we must go through a period of adjustment of our extension service to the work to be done in each county through the county farm bureau. Whatever the legal authority, respectively, of the bureaus, or of the college, or of the Federal Department of Agriculture, the three must be closely knit by real co-operation into a unified system of popular agricultural education.

#### THE STATE DEPARTMENT OF AGRICULTURE.

Under the constitutional amendment the Board of Agriculture, which had rendered the State a significant and important service for sixty-five years, was abolished, and a new Department of Agriculture was established. It still remains for the college and the department to work out the details of a division of labor which will prevent overlapping of activities.



### THE SMITH-HUGHES ACT.

The so-called Smith-Hughes Act of Congress provides Federal appropriations to each State in the Union which will supplement the grant, with State appropriations, for the purpose of developing vocational education of secondary grade in the industries, in agriculture and in home economics. The State authority for the expenditure of these funds is the State Board of Vocational Education, which in Massachusetts is the State Board of Education. The principal immediate interest of the college in this act lies in the preparation of teachers of agriculture. We are working out a plan by which the college will become the training center for these teachers. Here, again, is exemplified the need of co-ordination of these new activities with those of the college, as a part of what will ultimately be a comprehensive State system of agricultural education.

### SHORT COURSES.

The short winter courses were started in the college about 1900, and were very greatly enlarged in 1908. In my report to your Board for the year 1915, I said: "I am convinced that the time has arrived when these short courses must be developed more fully, and fitted more completely into the State system of agricultural education." The main reason why I have not heretofore presented a comprehensive project for this enlargement was the lack of funds for the purpose. Under the five-year plan of financial support there was need for all the money for existing projects. Now we are enabled to ask the Legislature for whatever money we feel we need. Furthermore, the war has made these short courses vitally necessary.

A resolve of the Legislature for 1918 reads as follows: —

*Resolved*, That in the opinion of the general court there should be established at the Massachusetts Agricultural College a two years' course in practical agriculture upon the completion of which certificates of graduation should be granted, that the course should be open to all residents of the commonwealth who have attained the age of seventeen years and who possess the educational qualifications necessary for admission to any public high school of the commonwealth.

The response of the college is indicated by the following votes passed by the Board of Trustees in October: —

*Voted*, That the college offer a course of study that will meet the intent and spirit of the Legislature of 1918, as embodied in the Senate Bill No. 374.

And further, it was —

*Voted*, That, recognizing the impracticability of organizing a course to cover two full years under present conditions, there shall, during the ensuing college year, be offered substantially a four months' course for students having at least a grammar school education, and who are not less than sixteen years of age, if, in the judgment of the faculty of the college, such a course seems to be feasible and practicable during the war emergency.

Prof. John Phelan, head of our department of rural sociology, has been appointed director of short courses, and has entered upon his important duties with characteristic energy, enthusiasm and thoroughness.

I wish to call attention to the following statement of the director, embodying a plan for the immediate enlargement of the work, which has been approved by your Board: —

#### THE NATURE OF SHORT-COURSE WORK.

Short-course work, for convenience of classification, includes all courses offered on or off the college campus of more than a week in length and less than the four-year college course. It includes no course that has for its object securing the college degree, undergraduate or graduate.

The purpose of short-course work is to provide instruction in agriculture and related subjects for men and women who either do not possess college entrance requirements, or who, for one reason or another, are unable to take the regular four-year college course.

The objective of short-course work is very clearly defined. It is to provide such practical instruction and training as will fit men and women for Massachusetts farms and Massachusetts farm life. The development of agriculture in Massachusetts necessitates the training of larger numbers of men and women who will have had such instruction as will enable them to make the farms produce more and pay better, and to realize the opportunities offered by agriculture in the State. Many classes of men and women demand this kind of instruction. These classes vary from those who have finished the eighth grade to the college graduate, but the majority of short-course students come with a background of practical farm

experience and a certain maturity of thought and judgment arising out of life.

Through the further development of short-course work the resources of the college will be made available to a large class of students in the State in so far as they are able to profit by these resources. It is not the aim of short-course work to enter the field of secondary agricultural education or to offer instruction preparatory for college, but to provide practical courses for young men and women who feel they are too old to enter a secondary school, and for men and women of mature years and practical experience. Such students have already enrolled in the first term of our new two-year course in practical agriculture, and they always take advantage of the opportunities offered by the ten weeks' winter school.

#### THE DEMAND FOR SHORT-COURSE WORK.

Provision should be made as rapidly as possible to meet the present demands for instruction from the following groups of students: —

1. A large group of young men and women who dropped out of school at the eighth grade and went to work on the farm, or who took a year or two of high school work, but who realize now the need of education in agriculture. There should be a thorough course combining both theory and practice for this group of young men and women who will come from the farm and return to the farm. Actual farm experience should be a part of this course, and credit required and allowed.
2. Graduates of county agricultural schools, for whom a short course should be provided that will supplement work of the county agricultural school.
3. Graduates of agricultural departments of high schools.
4. Graduates of high schools, who have not had agriculture and who are not eligible to the four-year college course.
5. Graduates of liberal arts colleges.
6. Adults who are not eligible to the four-year course.

#### PLANS FOR THE DEVELOPMENT OF SHORT-COURSE WORK.

##### *The Two-year Course in Practical Agriculture, recommended by the Legislature.*

The rapid development of the military situation during the summer and fall made it inadvisable to attempt more than a four months' course as the first step in the organization of a permanent, thoroughgoing, all-the-year course in practical agriculture combining both theory and practice, and open to students seventeen years of age or over. The four months' course that was authorized was open to men of sixteen, owing to the fact that eighteen-year-old men were in military service. However, the age limit will be raised to seventeen next year. The experience of the past two or three months has demonstrated that such a course will be warmly welcomed in the State, and will render a great service in the development of Massachusetts agriculture.



*The Ten Weeks' Winter School.*

This school, which has been established for a number of years, should be continued. There is a large demand for it. It serves more mature farmers and their wives, and has a very definite place.

*A Regional School.*

There has been a constant demand for a school of from four to six weeks in connection with some other educational institution located in the eastern part of the State, in or near Boston, by means of which short, practical courses in agriculture might be presented.

*The Summer School.*

The summer school meets a very definite need in the State. It provides instruction in agriculture for those who cannot attend at any other time.

*Graduates of County Agricultural Schools, Agricultural Departments of High Schools and College Graduates.*

To provide for this group of students I suggest the organization of one-year vocational courses along special lines, similar to the course in poultry now offered by the poultry department. These one-year vocational courses should be developed as rapidly as the demand for them seems to warrant. The graduate of the secondary agricultural school would thus be able to secure the particular kind of instruction that would meet his needs.

In conclusion may I say that through short-course work the college will serve from 600 to 800 students each year other than those enrolled in the regular courses. In order that the college may be able to render this service it will be necessary to make financial provision for instruction, equipment, etc.

**ALUMNI STATISTICS.**

During the year the secretary of the college has made a study of the occupations of the graduates of the college. The accompanying tabulation is based upon the civilian occupations of the graduates covering the period from 1871 to 1916, inclusive. Special attention is called to the fact that of the living graduates whose occupations are known over 56 per cent. are found in the classes of the eleven-year period, from 1906 to 1916; and less than 44 per cent. are found in the thirty-five year period from 1871 to 1905. The percentage of farm operators, including market gardening and floriculture, is substantially the same for the graduates of the earlier period as for the later period. It should be noted, however, that during the past eleven years



there has been a very marked increase in the percentage of graduates going into agricultural vocations, whereas of the graduates of the first thirty-five years a very large percentage went into non-agricultural vocations. Thus it appears that of the graduates of the first thirty-five years less than 53 per cent. are engaged in agricultural vocations, whereas of the graduates of the eleven-year period following that the percentage rises to above 77 per cent. Correspondingly, the percentage of graduates for the first period in non-agricultural vocations was 47 per cent., and for the second period, 23 per cent. Referring again to the fact that over half of the living graduates of the college fall in the second group, I think we find a satisfactory answer to the criticism that is sometimes made that we are not training definitely enough for the agricultural vocations.

*Occupational Classification of Graduates based on Statistics of Civilian Occupations collected August, 1918.*

	1871-1905.		1906-16.		TOTAL.	
	Num- ber.	Per Cent.	Num- ber.	Per Cent.	Num- ber.	Per Cent.
<b>Agricultural Vocations:—</b>						
Living graduates whose occupations are known.	496	43.36	648	56.64	1,144	-
Farm operators, including market gardeners and florists.	141	28.42	186	28.70	327	28.58
Agricultural college administrators and teachers.	26	5.24	36	5.55	62	5.42
Agricultural school administrators and teachers.	3	.61	42	6.48	45	3.93
Experiment station administrators and experts.	15	3.02	16	2.47	31	2.71
Extension service administrators and experts.	10	2.01	30	4.63	40	3.50
State agricultural experts, . . . . .	5	1.01	15	2.31	20	1.75
United States Department of Agriculture administrators and experts.	9	1.81	35	5.40	44	3.84
Landscape gardeners and foresters, . . .	15	3.02	68	10.50	83	7.25
Agricultural business, . . . . .	8	1.61	24	3.70	32	2.80
Miscellaneous agricultural experts, . . .	30	6.05	51	7.87	81	7.10
<b>Total, . . . . .</b>	<b>262</b>	<b>52.80</b>	<b>503</b>	<b>77.62</b>	<b>765</b>	<b>66.87</b>
<b>Non-agricultural vocations:—</b>						
Business, . . . . .	75	15.12	50	7.72	125	10.92
Engineers, . . . . .	37	7.46	26	4.01	63	5.51
Physicians, . . . . .	35	7.06	3	.46	38	3.32
Teachers, . . . . .	23	4.63	23	3.55	46	4.02
Miscellaneous, . . . . .	64	12.90	43	6.64	107	9.35
<b>Total, . . . . .</b>	<b>234</b>	<b>47.18</b>	<b>145</b>	<b>22.39</b>	<b>379</b>	<b>33.13</b>

REPORT OF THE COMMISSION ON THE INVESTIGATION OF AGRICULTURAL EDUCATION.

In January, 1918, the Commission on the Investigation of Agricultural Education, which was appointed during the summer of 1916, made its report to the General Court in a document of sixty pages, which covered in a very broad way the activities of the college and contained suggestions for improvement. The following is a digest of the main recommendations and criticisms: —

*The Trustees.* — The commission recommended no change in method of trustees' appointments, and said: "Happily, political considerations have not apparently influenced the appointment of trustees in the Massachusetts College."

*The Faculty.* — It was recommended that the faculty "should be paid adequate compensation for the services they render," and the statement was made that there was no evidence that members of our faculty were engaged in outside activities detrimental to their work.

*Retirement Age and Allowance.* — The commission recommended: "That all teachers or scientists of the staff be retired at the age of sixty-eight, and that persons so retiring, who have been in the service of the college at least fifteen years, should be granted retirement allowance either by the trustees or by the Teachers' Retirement Board, after suitable legislation."

*Entrance Requirements.* — The commission took the position that students should be as well prepared for entrance as those applying to any other college, and that the college should make its degree of equal worth to the degrees conferred by other colleges. The commission indicated a feeling that the entrance requirements had sometimes been administered a little too severely, with the effect of excluding some who were qualified to take the college course, and recommended that the methods of entrance should be broadened somewhat, with a rather more liberal policy of probation for students who technically may slightly fall below the requirements. It also recommended that more credit should be given for entrance to students who had had agriculture in county schools and in agricultural departments of high schools.

*Courses of Instruction.* — The commission laid down for the college the general principle that “in its distinctive field of agriculture, it should be comparable with the Massachusetts Institute of Technology in its field of the mechanic arts. No countenance whatever should be given to any suggestion that the agricultural college be placed on a level with trade or vocational schools.” The commission called attention to the fact that the college is bound, by the language of the original Morrill act, under which it was organized, “to give a liberal education as an integral part of its distinctive work.” In discussing the criticism that too small a proportion of the graduates of the college became practical farmers, the commission said that “the criticism is no longer merited,” and further, “that the college, in comparison with other agricultural colleges, makes a distinctively favorable showing, particularly in the proportion of its graduates who have become agricultural teachers and experts in agricultural science. The college authorities should be fully assisted by the public in maintaining a high standard of instruction and in holding students to high standards of scholarship.” The commission also endorsed the practice of the college of admitting students from other States.

*The Graduate School.* — The commission heartily commended the plan of maintaining a graduate school of high grade, and recommended ample provisions for its support.

*The Experiment Station.* — The commission emphasized very strongly the fundamental place of the experiment station, and recommended that the station be entirely relieved from the administration of control laws, in order to devote full time to experimental and investigational work.

*The Extension Service.* — The commission gave high praise to the extension service for its work in the field, but was critical of what it believed to be an apparent effort on the part of the college, through its extension service, to engage in activities that lie beyond the legitimate scope of an educational institution.

*Relation to the State Board of Agriculture.* — The commission endorsed the plan of division of labor and of co-operation that had already been worked out by the former State Board of Agriculture and the trustees of the college.

*Board of Agricultural Co-ordination.* — The commission recom-



mended that "a board of agricultural co-ordination be established by legislative action, whose duty it shall be to correlate the agricultural agencies of the Commonwealth, to supervise their respective publications, to prevent overlapping, and to secure the greatest efficiency and economy in their work."

*Material Needs of the College (Financial Support).* — The commission stated that "the first need of the college is permanent and adequate financial support." After discussing various methods of support, the commission said: "It is clear that it is desirable, from the point of view of the college, that its income may be so insured as to make possible the arrangement of a program of development for more than one year at a time."

The commission endorsed the principle, which has been adopted in seventeen other States, by which the Legislature "fixes in the statute a fractional or millage basis for the support of the college." Attention was called to the large amount of time and energy required each year in urging before the Legislature the needs of the college. The report also stated that, "in the event of the adoption of the State budget plan, the commission sees no sufficient reason why the Massachusetts Agricultural College should not be included in its operation." The commission stated that the accounts of the college are well conducted.

*Material Needs of the College (Buildings).* — Attention was called to the fact that the early buildings of the college were cheaply constructed, that they have all been outgrown and most of them worn out, and that important buildings are now imperatively needed. Special mention is made of an adequate library as being one of the greatest material needs. A strong case was made for the erection of a modern, commodious and fireproof building for chemistry. "Both to meet the vital requirements for military tactics and to provide means for the physical development of the students, the trustees should be empowered to provide a suitable gymnasium and armory." The commission recommended also that the trustees be empowered to make arrangements for a complete dormitory system, that the central heating plant be fully equipped, including a system of underground tunnels, and that the financial item for repairs be considerably enlarged. The commission believed that the quality of live stock should be improved, and



that more land should be purchased for the various purposes of the institution.

The commission presented to the General Court two plans for financial support, the first calling for a permanent annual appropriation for all purposes equivalent in amount to "twelve one-hundredths of one mill for each dollar of the total assessed valuation of real estate and tangible personal property in the Commonwealth." The alternative bill called for a five-year appropriation for all purposes, beginning in 1919 at \$590,000, and increasing each year to the amount of \$716,000 in 1923.

*The Budget Bill.* — Acting on the suggestion of the commission, that if the State adopted the budget plan the college should fall in line with it, the trustees prepared a bill which embodied the principles of the millage tax and the budget system combined. The Legislature took no action on this bill.

The commission's report represents the fullest and broadest investigation the college has ever had, and I hope that when the war emergencies are over the findings of the commission may receive adequate attention. While the commission was critical of the college in several important points, it gave a general endorsement of our main policies and an unqualified approval for much larger financial support.

#### THE LEGISLATIVE BUDGET.

In compliance with the new rules for submitting institutional budgets, the trustees have passed a budget covering expenses for 1919, which represents somewhat of an increase over the appropriation for 1918. Because of the fact that we are now required to estimate our expenditures on a gross rather than a net basis, it is not easy to show how the budget for 1919 compares with that of 1918.

#### ABSENCE IN FRANCE.

Your Board, as you will recall, has voted to give me leave of absence for one year in order that I may accept service in France with the Army Overseas Educational Commission. I wish to thank you for this opportunity to attempt a very important work, not only on behalf of our soldiers on the other side, but also on behalf of agricultural education and improve-

ment in the days after the war. Dean Lewis, who served so acceptably as acting president at a former period, will act in that capacity during my absence.

### **The Year in the Departments of Undergraduate Instruction.**

The dean reports that, in addition to the regular work of his office in attending to the absence records, discipline, etc., a large service was rendered through the faculty advisors in the effort to keep boys in college for the entire year, rather than volunteering for some branch of the military service. When at the end of the year the students were more free to enter the service the dean spent much time in keeping in touch with the boys, supporting them with proper recommendations and assisting them in entering the military branch of their choice. The system of faculty advisers for the different classes proved for the second year to be very much worth while. The seven advisers distributed among the four classes were members of the scholarship committee, and met weekly for exchange of views and discussion of the general scholarship situation. The dean recommends that this system, because of its efficiency, be extended.

Because of the shortening of the year, elsewhere referred to, and because of the general unrest which prevailed in the student body, the opinion of the students and faculty was that the work of the last academic year was not entirely satisfactory. It was apparent, however, that a similar situation prevailed at other educational institutions, and that here the situation was difficult, if not impossible, to overcome. Moreover, certain departments were handicapped by the fact that many of its teachers had left for military service. Until the end of the last college year the only department to be entirely abandoned was forestry; in all other cases the normal work was carried on as well as could be expected under the circumstances.

The work of the department of physical education was modified to better meet the requirements of the military department as prescribed for the Reserve Officers' Training Corps. There were no intercollegiate athletics during the year, but there were substituted for the same intergroup contests in football, basketball and hockey.

In the department of agricultural education apprentice teaching has been made a part of the work for students in training for educational pursuits. Arrangements have been made with the school authorities of Amherst, Hadley and the Smith Agricultural School of Northampton for carrying out this project. Apprentice teaching has been put on a permanent basis in co-operation with the Massachusetts Department of Education, under the general supervision of the Smith-Hughes Act. During the year the department published a bulletin exemplifying the efforts in apprentice teaching.

The library has taken its place with the other libraries of the country in contributing its time and service to the carrying on of war work. Several hundred volumes have been selected from miscellaneous contributions and sent to Camp Devens and to the American Library Association Despatch Office in Boston for direct shipment to France. The librarian spent ten weeks during the summer as acting librarian of the library at Camp Johnston, Jacksonville, Fla. The brief history of the Massachusetts Agricultural College, prepared by L. B. Caswell, 1871, and the "Bibliography of the College," Part I, issued by the college in commemoration of the completion of the first fifty years of instruction (1867-1917), have been printed and are being distributed. By far the most important gift to the library during the year is the "Thurber-Woolson Collection of Botanical Manuscripts." Some time ago George C. Woolson of the class of 1871 presented to the library more than a thousand letters from prominent botanists and eminent men of science. Letters from such men as Louis Agassiz, Spencer F. Baird, Charles Downing, Amos Eaton, George Engleman, G. Browne Goode, Asa Gray, W. T. Hooker, Fred Law Olmstead, C. F. Rafinesque, C. V. Riley, C. S. Sargent, John Torrey, Edward Tuckerman and George Vasey are to be found in this collection. All of these letters, postal cards, photographs and engravings have been carefully mounted and bound in four large quarto volumes. The material given by a member of the pioneer class of the college has intrinsic value and will always be of interest, and the splendid manner of its preservation adds dignity not out of proportion to either.



### **The Year in the Graduate School.**

The attendance at the graduate school was, owing to the war, very much below normal. There have, however, been twenty-seven members of the school since Dec. 1, 1917. Many of these were in attendance but a short time, and fully half have been regular members of the staff.

### **The Year in the Short Courses.**

The attendance at the winter and summer schools was also greatly affected by the war, and no expansion of the short-course work was undertaken until after the close of the collegiate year. Mention has already been made of the plans for developing this work in the near future.

### **The Year in the Experiment Station.**

The past year has been marked by the loss, owing to ill health, of the services of Director Brooks. Prof. Fred W. Morse is serving very acceptably as acting director.

The growing season has been favorable for practically all the field experiments, which are a continuation of those of past years. For the first time in the station's history wheat was made a prominent crop, and excellent yields were obtained from nine varieties secured from the western wheat States.

An investigation of growing, handling and marketing tobacco was completed by Mr. S. H. DeVault, assistant in agricultural economics, who resigned to enter the army after finishing his report. His material will be edited and prepared for publication by the department.

Diseases of the potato have required the attention of the botanical department throughout the summer, and the tobacco problem has been continued on the lines of last year. An investigation of rose canker was thoroughly made by Dr. P. J. Anderson, to the great benefit of the florists.

The inspection of feeding-stuffs and fertilizers has become of increased importance because of numerous attempts to work on to the public waste materials which are practically worthless



for their intended uses. Feeding and digestion experiments were conducted with hitherto little-used feeding-stuffs to determine their proper proportion in a ration. Much time was given, in co-operation with the State Food Administration and the Federal Fertilizer Control, to efforts to suppress the sale of worthless materials.

The European corn borer has been an especially serious problem for the entomological department. Before the active season was begun, a contract had been made with the Bureau of Entomology of the United States Department of Agriculture for co-operative work in suppressing this dangerous pest. The experiment station is to investigate the habits of the insect and possible methods for its control, while the Bureau's forces are to take charge of the survey to determine its spread and of the work of suppression. Mr. S. C. Vinal, assistant entomologist, who first discovered the presence of the insect last year, was engaged throughout the season in the study of the insect's habits, until his untimely death from influenza on September 26 ended the work of an enthusiastic, painstaking investigator.

The severe winter prevented the beginning of an experiment in cross-pollenization of peaches, by the complete destruction of peach buds throughout the region.

The microbiology department began this year a systematic study of the principles involved in preservation of fruits and vegetables by canning. The amount of work performed was limited by inability to secure the assistance needed.

This station is now apparently alone in the study of inheritance of egg-production in fowls by its department of poultry husbandry. This department is perfecting plans, in co-operation with the department of microbiology, for resumption of the suppression of bacillary white diarrhoea in chicks.

The cranberry substation succeeded in raising a maximum crop of cranberries in spite of the unusually late spring and early fall frosts.

The station has lost the services of one after another of its staff during the year without being able to replace them. It has been possible to make progress in most of the investigations, however; but as lines have been completed it has not been

practicable to begin new projects. A curtailment of the work of the station has thus been unavoidable, and its effect will probably be apparent in future publications.

### **The Market-Garden Field Station.**

Beginning with the season of 1918, the work has been planned on definite projects. The following have been started to date: —

- Limited variety tests.
- Asparagus demonstration plot.
- Manure economy tests.
- Special celery variety test.
- Seed growing.
- Production of root crops.
- Test of maggot control for turnips.
- Test of "Natures Plant Food."
- Spraying for the control of celery blight.
- Tests of lettuce varieties.
- Tests of spinach varieties.

All of the above projects have been carried through this first season, and results have been noteworthy. Labor conditions have prevented the proper conduct of the work; more assistance will be needed to care for the records, in order to make the work of maximum value. The sales for the year ending Nov. 30, 1918, will approximate \$2,000; it is the policy to make sales a secondary consideration, but to eliminate all possible wastes and sell at wholesale in the Boston market when such sales do not interfere with tests under way.

War conditions have made it impossible to complete the building program provided for by the Legislature of 1918. It has been necessary to defer the construction of the foreman's cottage because the funds available are entirely inadequate to construct a suitable house at the present cost of materials and labor. The two greenhouses planned have been erected, but it has been decided to defer the construction of the boiler house until next year.

Two meetings of vegetable growers have been held at the market-garden field station. The first of these was a meeting of the Boston Market Gardeners; about 40 were present. The

second was a field day, on August 10; in spite of the difficult labor situation and bad weather 130 were present, including a large delegation from Worcester and Directors Hartwell and Lipmann from their respective experiment stations.

It is felt that the market-garden field station can be made a very powerful factor in interesting and benefiting the commercial vegetable growers of Massachusetts. There has been a growing interest in the work, although the year has been a difficult one in which to bring men to the station because of the labor situation. With the development of the greenhouse equipment and the better knowledge of the work, it is believed that the market-garden field station will fully measure up to expectations.

#### **The Year in the Extension Service.**

The director points out that the year just closing has been one in which there have been many difficult problems to meet, but at the same time it has been one rich in opportunity. There have been many changes in the staff, and under present conditions it is extremely difficult to fill vacancies with competent persons. New legislation in Washington supporting the work, with the attendant regulations, and the organization of the Food Administration with its large number of workers, many of whom were unacquainted with the agricultural field and the system of agricultural education which has been built up, have raised many perplexing problems. We have tried to organize our extension service so that it would at least possess the elements of elasticity and adaptability in order to meet any emergency, and we have tried to imbue all our workers with a co-operative spirit in order that the extension service may function with other legitimate institutions of a public and private nature. Under all of these and other conditions the director believes that there is reason for our feeling a good deal of satisfaction with the work done and the progress made in developing the agriculture and country life of Massachusetts during the past year.

The director returned from Washington to active duty at Amherst on April 1, and on that date Mr. Kilham was assigned as the college representative in the office of the Food Administrator in Boston.



It would seem that perhaps the most striking thing in the work this year has been the assistance which our staff has been able to render to other organizations. There has been perfect co-operation between the extension forces and those of the Food Administration. The latter has delegated to the extension forces the work of increasing production, and home conservation. The extension forces have in turn given all possible aid, consistent with their work as teachers, in helping the Food Administration in its control and regulatory work. As a result of this co-operation it has not been necessary to create new machinery to meet the demands, although at times extra workers have been added.

Several of our staff have helped the Regional Milk Commission in the work of fixing the price of milk.

Our staff has given extended courses on food work at Smith, Mount Holyoke and Simmons colleges, and at some of the normal schools. We have co-operated with a number of organizations in Boston in maintaining the demonstration work on Boston Common. Members of our staff have been lent to farm bureaus, without charge for their services, for considerable lengths of time. Courses of lectures have been given for the school committee of Boston and the Boston Chamber of Commerce. The above will serve as examples of co-operation, but by no means exhausts the amount of work carried on with other organizations.

The large volume of work this year has been made possible by emergency funds coming from Washington, and those appropriated by the Massachusetts Food Administration.

The reorganization of the farm bureaus in accordance with the act of the Legislature, making these organizations public institutions in compliance with the anti-aid amendment, has made readjustments advisable in the relationship of the Federal and State extension systems to these county organizations. On October 1 the director assumed again direct relationship with the county organizations in matters of policies, finances and general administration, and Mr. S. R. Parker on that date became State leader of agricultural projects.

We come to the close, on December 1, of the five-year period for which funds have been appropriated to the college for



extension work in this State. The increase in the scale of salaries which must now be met, the increased cost of travel, equipment and supplies, the need of making permanent some of the projects which have been supported by the State Food Administration this year, and the desirability of adding specialists in departments of work which are much called for, make additional funds necessary for 1919.

### THE SCOPE OF THE COLLEGE TASK.

In my report of last year I called attention to the fact that the war had definitely and permanently enlarged the field of our service as a public institution. Not yet are all the features of this widened field clear. Just what effect this broadening of scope will have upon our investigation and our teaching and our extension work, we do not know. But we should realize that the change has come. To illustrate the character of the change, I wish to submit an outline of the food and feed supply problem prepared by Miss Lorian P. Jefferson on the basis of memoranda gathered both from our staff and from outside agencies. Unquestionably, we must deal not merely with the production of food and feeds, but also with their conservation and use. I am quite sure that in the near future we must enlarge our plans for investigation as well as for teaching, in an effort to occupy the entire field indicated in the outline, which follows this part of the report.

## THE IMMEDIATE NEEDS OF THE COLLEGE.

### LEGISLATIVE BUDGET, 1919.

While the country was confronted with the sole problem of prosecuting the war with all its available resources and energy, this institution adopted the policy of not pressing for legislative appropriations for large construction projects. In view of recent military developments, the early need of absorbing the labor of our returning soldiers, and the inevitable increase in our student body, especially the increase of women students, it now seems advisable not only to ask for the completion of some minor projects of long standing, but also to urge an appropriation for the proper accommodation of our women students. Accordingly, the following requests will be made of the Legislature of 1919:—

1. Women's building and equipment, . . . . .	\$150,000
2. Miscellaneous improvements in buildings and grounds, and teaching, operating and office equipment, . . . .	35,000
3. Market-garden field station, . . . . .	15,000
Completion of greenhouses, . . . . .	\$4,500
Administration building, . . . . .	7,500
Fencing farm area, . . . . .	2,000
Irrigation equipment, . . . . .	1,000
	<hr/>
	\$200,000

Following is a brief explanation of the need for the appropriations thus requested:—

#### *Women's Building and Equipment, \$150,000.*

The demand for the development of this work is much more pressing than it was a year ago. Women are continuing to come to us, and many more would come if we had adequate accommodations for them. Thirteen women came in September, and I understand that 8 or 10 of the 40 students who are coming to our short course from December 1 to April 1 are women. The past year has tremendously increased the interest of women in all phases of agriculture and the food problem. With the two-year short course starting in full swing next September we shall probably have close to a hundred women students on the campus.

How we shall take care of them with our present very meager housing facilities, it is difficult to say. Already we have more women than we can satisfactorily house. One thing is certain, — we cannot turn them away; in some way we must provide for them. A new building, therefore, should be built at once. It will be impossible for us to do anything for them next autumn, because it will be at least another year before any building will be ready to accommodate them. To ask them to wait two years would be grossly unjust to the women, who are pressing to take advantage of the work that the college has to give and which the State so much needs.

In respect to this most urgent demand and the general aspects of the problem, I feel that I can do no better than to quote in part from my discussion of a year ago: —

The Massachusetts Agricultural College is the only land-grant college in New England, and I think I am correct in saying the only one in the north, that does not have special courses and provision for women. This fact is not necessarily conclusive as to our own policy; it does, however, indicate that we stand alone in the policy, and consequently must justify it if it is to be maintained.

The development of woman's interest in agriculture is rather notable. The number of women farmers in the east seems to be increasing. The organization of women interested in agriculture, started some years ago, has been fostered by the war, and has become a strong movement. The mere fact that girls are taking courses in agriculture, short and long, in rapidly increasing numbers is of utmost significance. It is worth noting that before the war European as well as British agricultural educational systems were providing increasingly for women.

The emphasis upon the importance of food thrift in this war has increased immeasurably the need of providing for the education of women in certain lines of endeavor for which there is now wholly inadequate preparation. Questions as to the use of food, the saving of food, the preserving of food — to a large extent matters in charge of women — raise nothing less than an issue.

There is a fundamental reason why an agricultural college should provide courses for women. For fifty years we have been endeavoring, through research and teaching and extension service, to enable the farmer to make more money from his farm. As already noted, many of the land-grant colleges have courses in home economics. It is doubtful, however, if any college has yet adequately provided for the training of women for rural home making in the same sense that they have attempted to train the men for farm making. But however that may be, and whatever may be the difficulties in the way of carrying out such an ideal, the



fact remains that the whole field of rural home making needs to be developed, and can be developed adequately only in the atmosphere of an agricultural college.

I believe that we should not longer delay the inauguration of this type of work. The students are coming to us, the percentage of attendance increasing very rapidly in spite of the fact that we offer no special encouragement. Moreover, this very war emergency that is reducing our attendance of men increases the call for special work for women. Particularly in relation to the food question as a practical contribution to the war, both in production and in conservation, we find the need for educational work.

I therefore recommend that we ask the Legislature this year for an appropriation of \$150,000 for a dormitory building and equipment which will accommodate from 75 to 100 girls.

*Miscellaneous Improvements and Equipment, \$35,000.*

Each year we are obliged to seek an appropriation for miscellaneous improvements in buildings and grounds, and for miscellaneous teaching, operating and office equipment. Inasmuch as our requirements are never met by the Legislature, the list of improvements and equipment presented this year is, therefore, somewhat of an accumulation of needs of long standing.

*Market-garden Field Station, \$15,000.*

The Legislature of 1918 reduced our request for construction at the market-garden field station by \$12,000. Renewing this request we are petitioning for \$4,500 to complete the green-houses, and \$7,500 for the construction of an administration building, to provide offices, storage for records, a small laboratory to take care of the work which is to be done immediately on the grounds, a committee room, a dark room for photographic work, and accommodations for the heating plant for the administration and service buildings and the foreman's cottage.

In addition, we request an appropriation of \$2,000 to fence the farm area at the station, and \$1,000 to install necessary irrigation equipment.

Respectfully submitted,

KENYON L. BUTTERFIELD,

*President.*

## THE FOOD AND FEED SUPPLY PROBLEM IN MASSACHUSETTS.

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### I. Food Requirements.

#### Kinds and amounts.

1. Grain and grain products.
2. Meat and meat products.
3. Dairy products.
4. Vegetable and vegetable products.
5. Poultry and eggs.
6. Fruits and nuts.
7. Sea food.

### II. Food Resources.

#### A. Land.

1. Tilled.
2. Tillable.
  - a. Untilled.
  - b. Reclamation of wet and arid lands.

#### B. Labor.

1. Family.
2. Hired.

#### C. Equipment.

1. Buildings.
2. Machinery.

#### D. Fertilizers.

1. Commercial.
  - a. Kinds.
  - b. Amounts.
  - c. Sources.
2. Barnyard.

### III. Food Production.

#### A. Present.

1. Human food — kinds and amounts —

<ol style="list-style-type: none"><li>a. Grown</li><li>b. Marketed</li><li>c. Purchased</li></ol>	}	in Massachusetts, New England, United States.
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2. Animal feed — kinds and amounts —

<ol style="list-style-type: none"><li>a. Grown</li><li>b. Marketed</li><li>c. Purchased</li></ol>	}	in Massachusetts, New England, United States.
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III. Food Production — *Concluded.*

## B. Economic (desirable substitutions).

1. Kinds.
2. Quantities.
3. Nutritive values.
4. Prices or costs.

## C. Suggested changes.

1. Better farm management as to —
  - a. Competing crops.
  - b. Competing crop areas.
  - c. Markets.
2. Community organization —
  - a. For production.
  - b. For farm business.
    - (1) Purchase.
    - (2) Sale.
  - c. For use of labor.
  - d. For credit.
3. Provision for seeds, fertilizers, machinery.
4. Insurance facilities.
5. Credit facilities.
6. Legislation.
  - a. Marketing.
  - b. Land transfers.
  - c. Leases.
  - d. Protection of stock, etc.

## D. Economics of production.

1. Food *versus* feed.
2. Live stock *versus* grain, vegetables, etc.
3. Labor for agricultural production *versus* labor for industry.
4. Transportation of food *versus* transportation of feed.
5. Comparative costs, Massachusetts *versus* other sections of the United States.

## IV. Food Distribution.

## A. Exports and imports.

## B. Transportation agencies.

1. Railroads.
2. Ship lines.
3. Trolley lines.
4. Trucks.
5. Express.
6. Parcel post.

## C. Local food movements.

IV. Food Distribution — *Concluded.*

## D. Storage.

1. Farm.
2. Commercial.
3. Household.

## E. Standardization.

## F. Collective preparation.

## G. Bargaining.

1. Individual.
2. Collective.

## H. City marketing.

## I. Public markets.

## J. Prices.

1. Determination.
2. Publication.

## K. Prevention of waste and spoilage.

## L. Assistance in marketing.

1. Marketing agents.
2. Market news service.

## M. Inspection.

## V. Food Conservation.

## A. Commercial.

## 1. Manufacture.

- a. Vegetable products.
- b. Meat products.
- c. Fish products.
- d. Fruit products.
- e. Culls, seconds, surplus.
- f. Wastes.

## 2. Preparation.

- a. Bakeries.
- b. Delicatessen.
- c. Hotels and restaurants.
  - (1) Storage.
  - (2) Wastes.
    - (a) Variety.
    - (b) Servings.

## B. Home and commercial.

## 1. Preservation.

- a. Canning.
- b. Drying.
- c. Pickling.
- d. Salting.
- e. Smoking.



V. Food Conservation — *Concluded.*

## C. Home.

## 1. Storage.

a. Cellar.

b. Pit.

c. Pantry.

## 2. Wastes.

a. Table.

b. Market.

## D. Farm.

## 1. Diseases.

a. Plant.

b. Animal.

## 2. Pests.

a. Insect.

b. Weeds.

## 3. Wastes through —

a. Rats and mice.

b. Improper curing.

c. Improper threshing.

d. Careless handling.

e. Shrinkage.

f. Garden wastes.

g. Skim milk wasted.

## 4. Methods of control.

## E. Transportation.

## 1. Faulty icing.

## 2. Improper heating.

## 3. Poor cars.

## 4. Delays in transit.

## 5. Overloading.

## 6. Underloading.

## 7. Duplication of delivery.

## 8. Shrinkage in transit.

## 9. Dining car service.

a. Preparation.

b. Storage.

c. Servings.

## VI. Home Use of Food.

## A. Nutrition.

## 1. Food requirements.

## 2. Well-selected diets.

## 3. Modified diets.

VI. Home Use of Food — *Concluded.*A. Nutrition — *Concluded.*

## 4. Desirable changes.

*a.* Racial preferences.*b.* Household.*c.* Children.

## 5. Meals for large groups.

*a.* Hotels and restaurants.*b.* Public institutions.*c.* Camps, etc.

## 6. Diseases due to faulty diets.

## B. Standards.

1. Suitability.

2. Wholesomeness.

3. Cleanliness.

4. Purity.

5. Labor involved.

6. Relative cost.

## C. Marketing.

1. Selection.

2. Prices.

3. Market news service.

## D. Storage and refrigeration.

## E. Preparation.

1. Equipment.

2. Cooking.

## F. Serving.

## G. Wastes.

## TABLES AND STATISTICS.

TABLE I. — *Resignations.*

POSITION.	Name.
Chief clerk, extension service, . . . . .	Elbert L. Arnold.
Clerk, extension service, . . . . .	Ella B. Baldwin.
Instructor in zoölogy, . . . . .	Stanley C. Ball.
Superintendent of the farm, . . . . .	John J. Barber. <sup>1</sup>
Clerk, president's office, . . . . .	Evelyn Brewster.
Assistant chemist, experiment station, . . . . .	James P. Buckley.
Stenographer, division of rural social science, . . . . .	Bertha E. Connelly.
Extension associate professor of agricultural economics, . . . . .	E. Farnham Damon.
Assistant, department of agricultural economics, . . . . .	Samuel H. DeVault.
Stenographer, division of agriculture, . . . . .	Hazel Dewar.
Assistant professor of mathematics, . . . . .	Charles R. Duncan.
Stenographer, extension service, . . . . .	Margaret L. Evens.
Associate professor of beekeeping, . . . . .	Burton N. Gates.
Field agent, . . . . .	Charles H. Gould.
Clerk, treasurer's office, . . . . .	Marion E. Kelsey.
Mailing clerk, extension service, . . . . .	Clarence A. Kendall.
Clerk, department of poultry husbandry, . . . . .	Rachael G. Leslie.
Resident nurse, . . . . .	Florence Levensaler.
Extension assistant professor of poultry husbandry, . . . . .	Alfred G. Lunn.
Clerk, department of poultry husbandry, . . . . .	Grace E. MacMullen.
Clerk, department of poultry husbandry, . . . . .	Elizabeth E. Mooney.
Library assistant, . . . . .	Marion E. Norton.
Clerk, treasurer's office, . . . . .	Clara Parker.
Assistant chemist, experiment station, . . . . .	Bernard L. Peables.
Clerk, department of floriculture, . . . . .	Helen C. Pomeroy.
Extension assistant professor of home economics, . . . . .	Marie Sayles.
Extension assistant in home economics, . . . . .	Mrs. F. A. C. Smith.
Supervisor of short courses and assistant professor of market garden- ing, . . . . .	Andrew S. Thomson.
Clerk, farm management, extension service, . . . . .	Flora E. Torrey.
Library assistant, . . . . .	Ethel M. Turner.
Assistant in entomology, experiment station, . . . . .	Stuart C. Vinal. <sup>2</sup>
First clerk, division of agriculture, . . . . .	Aurelia B. Wentworth.
Chief clerk, extension service, . . . . .	Burton C. Whidden.
Instructor in agricultural economics, . . . . .	Otto F. Wilkinson.

<sup>1</sup> Died of pneumonia Oct. 3, 1918, at Amherst.<sup>2</sup> Died of pneumonia Sept. 26, 1918, at Arlington, Mass.

TABLE II. — *New Appointments.**A. In the Academic Departments.*

POSITION.	Name.	Institution from which graduated and Degrees.
Instructor in poultry husbandry, .	Luther Banta, . . .	B.Sc., Cornell University, 1915.
Assistant professor of agronomy, .	Herbert P. Cooper, .	B.Sc., Clemson College, 1911; M.Sc., University of Wisconsin, 1916.
Associate professor of market gardening.	Arthur L. Dacy, . . .	B.Sc., Massachusetts Agricultural College, 1902.
Supervisor of agricultural courses for women.	Margaret Hamlin, . .	B. A. Smith College, 1904.
Assistant professor of mathematics,	Frank C. Moore, . . .	A.B., Dartmouth College, 1902.
Instructor in agricultural economics,	Donald W. Sawtelle, .	B.Sc., University of Maine, 1913; M.Sc., University of Wisconsin, 1915.
Professor of home economics, .	Edna M. Skinner, <sup>1</sup> .	B.Sc., Columbia University, 1908.

*B. In the Experiment Station.*

Assistant chemist, . . . . .	Esther S. Mixer, . . .	B.A., Mount Holyoke, 1918.
Assistant chemist, . . . . .	Harold B. Pierce, . . .	B.Sc., Massachusetts Agricultural College, 1917.

*C. In the Extension Service.*

Garden supervisor, . . . . .	Henry R. Francis, . . .	B.Sc., Massachusetts Agricultural College, 1910.
Assistant supervisor, junior extension.	William F. Howe, . . .	North Adams Normal School.
Assistant to director, . . . . .	Daniel J. Lewis, . . .	B.Sc., Massachusetts Agricultural College, 1915.
Assistant professor of poultry husbandry.	William C. Monahan, .	B.Sc., University of Maine, 1914.
Assistant director, . . . . .	Ralph W. Redman, . . .	B.Sc., University of Maine, 1912.
Professor of farm management demonstration.	Benjamin G. Southwick,	B.Sc., Massachusetts Agricultural College, 1912.
Extension instructor in home economics.	Mrs. F. A. C. Smith, .	- - -
Extension instructor in market gardening.	Harold D. Phelps, . . .	B.Sc., Massachusetts Agricultural College, 1909.

*D. Miscellaneous.*

Resident nurse, . . . . .	Elizabeth Olmstead, .	- - -
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<sup>1</sup> To take effect Jan. 1, 1919.



TABLE II. *New Appointments — Concluded.**E. In the Clerical Staff.*

POSITION.	Name.
Clerk, treasurer's office, . . . . .	Ruth Brooks.
Mailing clerk, extension service, . . . . .	Cassie L. Clark.
Library assistant, . . . . .	Lois Clark.
Clerk, president's office, . . . . .	Ruth Clow.
Clerk, department of floriculture, . . . . .	Viola Damon.
Library assistant, . . . . .	Louise J. Delano.
Clerk, extension service, . . . . .	Katharine Gardner.
Clerk, department of poultry husbandry, experiment station, . . . . .	Nettie A. Gilmore.
Stenographer, division of rural social science, . . . . .	Amy L. Hamilton.
Stenographer, department of entomology, . . . . .	Elizabeth M. Kiley.
Chief clerk, extension service, . . . . .	Carleton B. Livermore.
Clerk, treasurer's office, . . . . .	Helen A. Martin.
Clerk, treasurer's office, . . . . .	Clara Parker.
Clerk, extension service, . . . . .	Helen A. Phillips.
Clerk, poultry department, . . . . .	Ruby Sanborn.
Clerk, division of agriculture, . . . . .	Marjorie Sullivan.
Clerk, extension service, . . . . .	Aline B. Surprenant.
Stenographer, extension service, . . . . .	Clara Swift.
Stenographer, department of poultry husbandry, . . . . .	Doris Tower.
First clerk, division of agriculture, . . . . .	Marion Warner.
Chief clerk, extension service, . . . . .	Burton C. Whidden.

TABLE III. — CHANGES IN TITLE AND TRANSFERS.

*Changes in Title of Officers of the Institution.*

NAME.	Former Title.	Present Title.
Orville A. Jamison, . . . . .	Assistant professor of dairying, . . . . .	Associate professor of dairying.
Lorian P. Jefferson, . . . . .	Research secretary, division of rural social science.	Assistant professor, division of rural social science.
Loyal F. Payne, . . . . .	Assistant professor of poultry husbandry.	Associate professor of poultry husbandry.
Byron E. Pontius, . . . . .	Assistant professor of animal husbandry.	Associate professor of animal husbandry.
William S. Regan, . . . . .	Instructor in entomology, . . . . .	Associate professor of entomology.
Harold E. Robbins, . . . . .	Assistant professor of physics, . . . . .	Associate professor of physics.
Ellen L. Welch, . . . . .	Stenographer, department of botany.	Clerk, department of botany.
William P. Brooks, . . . . .	Director of the experiment station.	Consulting agriculturist, experiment station.
John Phelan, . . . . .	Professor of rural sociology, . . . . .	Director of short courses and professor of rural sociology.
Walter W. Chenoweth, . . . . .	Associate professor of pomology, . . . . .	Professor of horticultural manufactures.
Margaret Gaskell, . . . . .	Stenographer, Registrar's office, . . . . .	Clerk, Registrar office.

*Transfers.*

- Earl Jones, from instruction staff to extension service staff as extension associate professor of agronomy, July 1, 1918.
- Viola Damon, stenographer, extension service, to clerk, division of horticulture, Oct. 1, 1918.
- Edith Robinson, clerk, department of beekeeping, to clerk, president's office, Oct. 1, 1918.
- Hazel Parker, stenographer, extension service, to stenographer, dean's office, September, 1918.

TABLE IV. — *Leaves of Absence.**Miscellaneous Service.*

POSITION.	Name.	Cause of Leave.
Professor of chemistry, . . . .	Ernest Anderson, . . . .	Service at Transvaal University.
Director of experiment station, . .	William P. Brooks, . . . .	Ill-health, March 1 to Sept. 31, 1918.
Professor of forestry, . . . .	William D. Clark, . . . .	Service with New England Fuel Administrator.
Professor of dairying, . . . .	William P. B. Lockwood, . . . .	Sabbatical leave. July 1, 1918, to Aug. 31, 1919.
Assistant professor of mathematics,	William L. Machmer, . . . .	Service with United States Department of Agriculture.
Research pomologist, . . . .	Jacob K. Shaw, . . . .	Sabbatical leave. Sept. 1, 1918, to Feb. 28, 1919.

*War Service.*

POSITION.	Name.
Assistant chemist, experiment station, . . . . .	Windom A. Allen.
Extension assistant professor of farm demonstration, . . . . .	Wesley H. Bronson.
President of the college, <sup>1</sup> . . . . .	Kenyon L. Butterfield.
Assistant in physical education, . . . . .	Llewelyn L. Derby.
Instructor in dairying, . . . . .	Harry D. Drain.
Associate professor of animal pathology, . . . . .	George E. Gage.
Assistant professor of physical education, . . . . .	Harold M. Gore.
Instructor in mathematics, . . . . .	Burt A. Hazeltine.
Assistant professor of floriculture, . . . . .	August G. Hecht.
Extension instructor in charge of poultry club work, . . . . .	Roswell W. Henninger.
Professor of physical education and hygiene, . . . . .	Curry S. Hicks.
Instructor in microbiology, . . . . .	Egerton G. Hood.
Extension assistant professor of pomology, . . . . .	Austin D. Kilham.
Assistant in veterinary science, experiment station, . . . . .	John B. Lentz.
Instructor in English, . . . . .	Frank P. Rand.
Assistant chemist, experiment station, . . . . .	Robert S. Scull.
Assistant chemist, experiment station, . . . . .	John B. Smith.
Extension assistant professor of landscape gardening, . . . . .	Frank A. C. Smith.
Instructor in poultry husbandry, . . . . .	Lloyd L. Stewart.
Extension instructor in pomology, . . . . .	Ralph E. Van Meter.
Head of division of horticulture and professor of landscape gardening, . . . . .	Frank A. Waugh.

<sup>1</sup> From Dec. 1, 1918.

TABLE V.—*Speakers for the Year.**A. Speakers for Wednesday Assembly for Year ending Nov. 30, 1918.***1917.**

- Dec. 5. — Dean Edward M. Lewis, M. A. C.  
 Dec. 19. — Prof. Frank A. Waugh, M. A. C.

**1918.**

- Jan. 2. — Prof. Edgar L. Ashley, M. A. C.  
 Jan. 9. — Prof. Raymond G. Gettell, Amherst College.  
 Jan. 16. — Pres. Kenyon L. Butterfield, M. A. C.  
 Jan. 30. — Student forum.  
 Feb. 6. — Mr. C. H. Brewer, New York City.  
 Feb. 13. — Mr. Philip W. Ayres, Boston, Mass.  
 Feb. 27. — Prof. E. F. Humphreys, Trinity College, Hartford, Conn.  
 Mar. 6. — Prof. Charles H. Patterson, M. A. C.  
 Mar. 13. — Student forum.  
 Mar. 20. — Prof. A. A. Mackimmie, M. A. C.  
 Mar. 27. — Rev. James D. Taylor, Amherst, Mass.  
 Apr. 3. — Hon. Frank A. Pope, Boston, Mass.  
 Apr. 10. — Rev. J. Franklin Babb, Haverhill, Mass.  
 Apr. 17. — Pres. Kenyon L. Butterfield, M. A. C.  
 Oct. 30. — Pres. Kenyon L. Butterfield, M. A. C.  
 Nov. 6. — Mr. S. K. Ratcliffe, London, Eng.  
 Nov. 13. — Mr. Edwin R. Embree, New York City.  
 Nov. 20. — Mr. Leonard G. Robinson, Springfield, Mass.

*B. Speakers at Sunday Chapel, Oct. 14, 1917, to Nov. 30, 1918.***1917.**

- Oct. 14. — Pres. Kenyon L. Butterfield, M. A. C.  
 Nov. 4. — Mr. Wellington H. Tinker, New York City.  
 Nov. 11. — Rev. Louis C. Cornish, Boston, Mass.  
 Nov. 18. — Dean William Wallace Fenn, Cambridge, Mass.  
 Nov. 25. — Dr. A. B. Benson, Yale University, New Haven, Conn.  
 Dec. 2. — Rev. Frank L. Goodspeed, Amherst, Mass.  
 Dec. 9. — Pres. John M. Thomas, Middlebury College, Middlebury, Vt.

**1918.**

- Jan. 6. — Rabbi Louis L. Mann, New Haven, Conn.  
 Jan. 13. — Prin. Alfred E. Stearns, Andover, Mass.  
 Jan. 20. — Rev. John H. Holmes, New York City.  
 Jan. 27. — Rev. Judson L. Cross, Fitchburg, Mass.  
 Feb. 3. — Rev. Niel McPherson, Springfield, Mass.  
 Feb. 10. — Dean Charles R. Brown, New Haven, Conn.  
 Feb. 17. — Rev. Houghton Schumacher, Hingham, Mass.  
 Mar. 3. — Mr. Bruce Barton, New York City.  
 Mar. 10. — Prof. Albert P. Fitch, Amherst, Mass.  
 Mar. 17. — Rev. Herbert A. Jump, Manchester, N. H.  
 Mar. 24. — Rev. A. H. Wheelock, Needham, Mass.  
 Mar. 31. — Rev. William E. Strong, Boston, Mass.  
 Apr. 7. — Rev. J. Edgar Park, Newton, Mass.  
 Apr. 14. — Rev. Arthur H. Bradford, Rutland, Vt.  
 Nov. 3. — Rev. S. Paul Jefferson, Amherst, Mass.  
 Nov. 10. — Rev. William Horace Day, Bridgeport, Conn.  
 Nov. 17. — Rev. D. Brewer Eddy, Boston, Mass.  
 Nov. 24. — Rev. Herbert J. White, Hartford, Conn.

TABLE VI. — *Attendance.**A. In Work of College Grade.*

	Registration Nov. 30, 1917.	REGISTRATION NOV. 30, 1918.			
		S. A. T. C.	REGULAR.		Total.
			Men.	Women.	
Senior class, . . . . .	64	20	22	10	52
Junior class, . . . . .	113	47	14	3	64
Sophomore class, . . . . .	117	66	7	6	79
Freshman class, . . . . .	108	79	30	5	114
Probationary freshmen, . . . . .	10	—	—	—	—
	412	212	73	24	309
Graduate students, . . . . .	29	—	7	3	10
Unclassified students, . . . . .	50	151	14	5	170
Vocational poultry students, . . . . .	5	—	—	—	—
Special students, . . . . .	4	—	—	—	—
	500	363	94	32	489

*B. Short-course Enrollment and Convention Registration.*

	1917.	1918.
Winter school, . . . . .	110	90
Farmers' week, . . . . .	800	632
Beekeepers' school, . . . . .	50	—
Polish farmers' day, . . . . .	300	12
County agents' conference, . . . . .	120	150
Summer school of agriculture and country life, . . . . .	90	68
Conference on rural organization, . . . . .	121	—
School for rural social service, . . . . .	20	—
Ministers' conference, . . . . .	8	—
Poultry convention, . . . . .	176	200
Boys' camps, . . . . .	102	17
Girls' camp, . . . . .	17	24
	1,914	1,193



TABLE VII. — *Legislative Budget, 1918.*

ITEMS.	Amount asked.	Amount granted.
Improvements at the power plant, including coal-handling apparatus, turbine house and equipment, and residence for engineer.	\$59,700	\$54,500
Improvements at dining hall, . . . . .	12,000	12,000
Poultry buildings, . . . . .	7,500	-
Potting shed and bulb cellar at greenhouses, . . . . .	6,659	-
Miscellaneous improvements in buildings and grounds, . . . . .	30,306	20,000
Miscellaneous teaching, operating and office equipment, . . . . .	20,680	
	\$136,845	\$86,500
Buildings, equipment and maintenance of market-garden field station at Lexington: —		
Greenhouses and heating plant, . . . . .	\$13,500	\$9,000
Foreman's cottage, . . . . .	4,500	4,500
Administration building, . . . . .	7,500	-
Maintenance, . . . . .	3,000	3,000
	\$28,500	\$16,500

TABLE VIII. — *Statistics of Freshmen entering Massachusetts Agricultural College, October, 1918.*A. *Home Addresses of Students (classified by Towns and Cities).*

Abington, . . . . . 1	Hingham, . . . . . 1	QUINCY, . . . . . 1
Amesbury, . . . . . 1	HOLYOKE, . . . . . 1	Reading, . . . . . 1
Amherst, . . . . . 9	Ipswich, . . . . . 1	REVERE, . . . . . 1
Arlington, . . . . . 4	LAWRENCE, . . . . . 1	Sherborn, . . . . . 1
Belchertown, . . . . . 3	Lenox, . . . . . 1	Shelburne, . . . . . 3
BOSTON, . . . . . 6	LYNN, . . . . . 3	SOMERVILLE, . . . . . 1
Brattleboro, Vt., . . . . . 1	MALDEN, . . . . . 1	Southbridge, . . . . . 1
Brookline, . . . . . 3	Mansfield, . . . . . 1	SPRINGFIELD, . . . . . 5
BROOKLYN, N. Y., . . . . . 1	Maplewood, N. J., . . . . . 1	Stafford Springs, Conn., . . . . . 1
Chelmsford, . . . . . 1	Maynard, . . . . . 1	Stockbridge, . . . . . 1
CHELSEA, . . . . . 1	Medfield, . . . . . 1	Stoughton, . . . . . 1
CHICOPEE, . . . . . 1	MEDFORD, . . . . . 2	Stow, . . . . . 1
China, . . . . . 2	Methuen, . . . . . 1	Sudbury, . . . . . 1
Deerfield, . . . . . 1	Middlebury, Conn., . . . . . 1	Sunderland, . . . . . 1
Dudley, . . . . . 1	Montague, . . . . . 1	Tarrytown, N. Y., . . . . . 2
Easthampton, . . . . . 1	NEW BEDFORD, . . . . . 1	WATERBURY, CONN., . . . . . 1
East Greenwich, R. I., . . . . . 1	NEWTON, . . . . . 4	Wenham, . . . . . 1
FALL RIVER, . . . . . 1	NEW YORK CITY, N. Y., . . . . . 3	Westfield, . . . . . 1
Falmouth, . . . . . 1	NORTHAMPTON, . . . . . 1	Weymouth, . . . . . 1
Glastonbury, Conn., . . . . . 2	NORTH ADAMS, . . . . . 2	Williamstown, . . . . . 1
Greenfield, . . . . . 1	Northbridge, . . . . . 1	WOBURN, . . . . . 1
Hardwick, . . . . . 1	Orange, . . . . . 2	WORCESTER, . . . . . 6
HAVERHILL, . . . . . 3	PASSAIC, N. J., . . . . . 1	

TABLE VIII. — *Statistics of Freshmen entering Massachusetts Agricultural College, October, 1918 — Continued.**B. Home Addresses (classified by States).*

	Number.	Per Cent.		Number.	Per Cent.
Connecticut, . . . . .	5	4.38	New York, . . . . .	6	5.26
China, . . . . .	2	1.75	Rhode Island, . . . . .	1	.88
Massachusetts, . . . . .	97	85.09	Vermont, . . . . .	1	.88
New Jersey, . . . . .	2	1.75		114	99.99

*C. Home Addresses (classified by Counties of Massachusetts).*

	Number.	Per Cent.		Number.	Per Cent.
Barnstable, . . . . .	1	1.03	Middlesex, . . . . .	19	19.59
Berkshire, . . . . .	5	5.15	Norfolk, . . . . .	7	7.22
Bristol, . . . . .	3	3.09	Plymouth, . . . . .	2	2.06
Essex, . . . . .	11	11.34	Suffolk, . . . . .	8	8.25
Franklin, . . . . .	9	9.28	Worcester, . . . . .	10	10.30
Hampden, . . . . .	8	8.25		97	99.99
Hampshire, . . . . .	14	14.43			

*D. Nativity of Parents.*

	Number.	Per Cent.
Neither parent foreign born, . . . . .	80	70.18
Both parents foreign born, . . . . .	18	15.79
Father (only) foreign born, . . . . .	3	2.63
Mother (only) foreign born, . . . . .	13	11.40
	114	100.00

*E. Education of Father.*

	Number.	Per Cent.
Common school, . . . . .	49	42.98
High school, . . . . .	22	19.29
Business school, . . . . .	18	15.79
College or university, . . . . .	18	15.79
No statistics, . . . . .	7	6.14
	114	99.99

TABLE VIII. — *Statistics of Freshmen entering Massachusetts Agricultural College, October, 1918 — Continued.**F. Religious Census.*

	MEMBERSHIP.		PREFERENCE.		TOTALS.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Baptist, . . . . .	11	9.65	3	2.63	14	12.28
Catholic, . . . . .	11	9.65	1	.88	12	10.53
Congregationalist, . . . . .	32	28.07	16	14.03	48	42.10
Episcopal, . . . . .	5	4.04	3	2.63	8	7.02
Hebrew, . . . . .	1	.88	3	2.63	4	3.51
Methodist, . . . . .	8	7.02	—	—	8	7.02
Unitarian, . . . . .	3	2.63	1	.88	4	3.51
Universalist, . . . . .	1	.88	2	1.75	3	2.63
Miscellaneous, . . . . .	7	6.14	2	1.75	9	7.90
No statistics, . . . . .	—	—	—	—	4	3.51
	79	68.96	31	27.18	114	100.01

*G. Occupation of Father.*

	Number.	Per Cent.
Agriculture and horticulture, . . . . .	26	22.81
Artisans, . . . . .	25	21.92
Business, . . . . .	30	26.31
Deceased or no statistics, . . . . .	8	7.01
Miscellaneous, . . . . .	10	8.77
Professional, . . . . .	15	13.16
	114	99.98

*H. Intended Vocation of Student.*

	Number.	Per Cent.
Agriculture or horticulture (practical), . . . . .	55	48.24
Agriculture or horticulture (professional), . . . . .	31	27.19
Miscellaneous, . . . . .	2	1.75
Undecided or no statistics, . . . . .	26	22.81
	114	99.99

TABLE VIII. — *Statistics of Freshmen entering Massachusetts Agricultural College, October, 1918 — Concluded.**I. Farm Experience.*

	Number.	Per Cent.
Brought up on a farm, . . . . .	26	22.81
Not brought up on a farm and having had no or practically no farm experience.	34	29.82
Not brought up on a farm but having had some farm experience,	54	47.37
	114	100.00

*J. Miscellaneous Statistics.*

Average age, . . . . . 18.84 years.

TABLE IX. — *Cases treated at the Infirmary, Dec. 1, 1917, to Nov. 30, 1918.*

	Daily Count.	Individual.
Dec. 1, 1917, to Jan. 1, 1918: —		
House cases, . . . . .	7	1
Out-patients, . . . . .	22	15
January 1 to February 1: —		
House cases, . . . . .	67	9
Out-patients, . . . . .	77	60
February 1 to March 1: —		
House cases, . . . . .	131	24
Out-patients, . . . . .	84	62
March 1 to April 1: —		
House cases, . . . . .	99	23
Out-patients, . . . . .	165	106
April 1 to May 1: —		
House cases, . . . . .	39	9
Out-patients, . . . . .	36	20
September 25 to October 1: —		
House cases, . . . . .	35	8
Out-patients, . . . . .	10	6
October 1 to November 1: —		
House cases, . . . . .	182	29
Out-patients, . . . . .	135	76
November 1 to December 1: —		
House cases (at infirmary), . . . . .	162	38
House cases (at Draper Hall Hospital), . . . . .	58	15
Out-patients, . . . . .	233	135
Number of house cases, . . . . .		780
Number of out-patients, . . . . .		762
Total, . . . . .		1,542
Number cared for in the house, . . . . .		156
Number cared for as out-patients, . . . . .		480
Total, . . . . .		636



## REPORT OF THE TREASURER

FOR THE FISCAL YEAR ENDING NOV. 30, 1918.

## BALANCE SHEET.

	DR.	CR.
<b>1917.</b>		
Dec. 1. To balance on hand, . . . . .	\$23,311 52 <sup>1</sup>	
<b>1918.</b>		
Nov. 30. To receipts for fiscal year, . . . . .	705,491 67	
Expenditures for fiscal year, . . . . .		\$695,059 52
Balance on hand, . . . . .		33,743 67
	\$728,803 19	\$728,803 19

<sup>1</sup> Balance increased \$550 on account of an overdraft on land purchased in last fiscal year.

## SCHEDULE A. — INCOME.

	Income.	Totals.
Income from students and others, . . . . .		\$117,450 53
Tuition, . . . . .	\$1,965 75	
Laboratory fees, . . . . .	3,899 63	
Rents, . . . . .	4,789 26	
Department sales, . . . . .	97,340 62	
Department transfers, . . . . .	3,959 30	
Miscellaneous, . . . . .	5,495 97	
Income from grants by nation and State: —		
State aid, . . . . .		459,648 51
Income from endowment, . . . . .	3,313 32	
Appropriation for current expenses, . . . . .	272,000 00	
Administration, . . . . .	\$39,000 00	
Maintenance, . . . . .	110,000 00	
Instruction, . . . . .	115,000 00	
Graduate school, . . . . .	3,000 00	
Additional land, . . . . .	5,000 00	
Appropriation for extension service, . . . . .	50,000 00	
Appropriation for experiment station, . . . . .	46,000 00	
Maintenance, . . . . .	\$40,000 00	
Feed law, . . . . .	6,000 00	
Receipts from special appropriation, . . . . .	88,335 19	
Federal aid, . . . . .		89,669 81
Income from land grant of 1862, . . . . .	7,300 00	
Income from Hatch fund of 1887, . . . . .	15,000 00	
Income from Morrill fund of 1890, . . . . .	16,666 66	
Income from Adams fund of 1906, . . . . .	15,000 00	
Income from Nelson fund of 1907, . . . . .	16,666 67	
Income from Smith-Lever fund of 1914, . . . . .	19,036 48	
Income from other sources: —		
Income from experiment station, . . . . .		35,124 23
Fertilizer receipts, . . . . .	7,007 50	
Agricultural receipts, . . . . .	6,064 36	
Cranberry receipts, . . . . .	6,220 20	
Chemical receipts, . . . . .	13,423 39	
Miscellaneous receipts, . . . . .	2,408 78	

SCHEDULE A. — INCOME — *Concluded.*

	Income.	Totals.
Income from other sources — <i>concluded.</i>		
Income from extension service,		\$3,598 59
Winter school,	\$477 00	
Summer school,	697 12	
Correspondence courses receipts,	394 25	
Exhibits,	282 50	
Civic improvements,	156 09	
Miscellaneous receipts,	1,591 63	
Totals,	\$705,491 67	\$705,491 67

## CLASSIFICATION OF INCOME FROM STUDENTS AND OTHERS.

	Laboratory Fees.	Department Sales.	Transfers.	Rent.	Miscellaneous.	Tuition.	Totals.
Agronomy, . . . . .	\$195 00	-	\$4 12	-	-	-	\$199 12
Animal husbandry, . . . . .	139 50	-	-	-	-	-	139 50
Beekeeping, . . . . .	-	\$584 89	-	-	\$3 23	-	588 12
Botany, . . . . .	320 50	-	-	-	-	-	320 50
Chemistry, . . . . .	1,536 00	-	3 55	-	6 37	-	1,545 92
Dairying, . . . . .	111 50	26,367 69	-	-	-	-	26,479 19
Entomology, . . . . .	21 00	-	4 90	-	-	-	25 90
Farm management, . . . . .	123 25	-	10 25	-	5 06	-	138 56
Floriculture, . . . . .	114 00	2,293 98	-	-	-	-	2,407 98
Farm, . . . . .	-	40,267 80	1,720 76	-	-	-	41,988 56
Forestry, . . . . .	-	-	-	-	7 00	-	7 00
Freshman agriculture, . . . . .	234 00	-	4 55	-	-	-	238 55
General agriculture, . . . . .	-	-	-	-	75	-	75
General horticulture, . . . . .	-	-	2,154 36	-	517 51	-	2,671 87
Grounds, . . . . .	-	-	2 00	-	90 24	-	92 24
Horticulture manufacturing, . . . . .	-	374 33	-	-	-	-	374 33
Hospital, . . . . .	-	-	-	-	280 32	-	280 32
Landscape gardening, . . . . .	142 00	-	15 71	-	-	-	157 71

CLASSIFICATION OF INCOME FROM STUDENTS AND OTHERS — *Concluded.*

	Laboratory Fees.	Department Sales.	Transfers.	Rent.	Miscellaneous.	Tuition.	Totals.
Language and literature,	\$112 00	-	-	-	-	-	\$112 00
Library, . . . . .	-	\$474 07	\$6 00	-	-	-	480 07
Market gardening, . . . . .	73 00	3,350 29	-	-	-	-	3,423 29
Market-garden field station,	-	2,317 46	-	-	-	-	2,317 46
Mathematics, . . . . .	38 00	-	22 10	-	-	-	60 10
Microbiology, . . . . .	190 00	-	-	-	\$244 45	-	434 45
Military, . . . . .	-	-	-	-	89 41	-	89 41
Miscellaneous, . . . . .	-	-	-	-	676 81	-	676 81
Mount Toby, . . . . .	-	357 00	-	-	-	-	357 00
Physics, . . . . .	-	-	-	\$46 00	30 00	-	76 00
Pomology, . . . . .	71 00	2,564 05	-	-	-	-	2,635 05
Poultry husbandry, . . . . .	102 50	16,346 55	-	-	-	-	16,449 05
Rural engineering, . . . . .	191 00	-	-	-	-	-	191 00
Veterinary, . . . . .	10 00	-	5 00	-	5 12	-	20 12
War emergency, . . . . .	-	2,042 51	-	-	-	-	2,042 51
Women's dormitories, . . . . .	-	-	-	542 00	-	-	542 00
Zoölogy and geology, . . . . .	175 38	-	-	-	-	-	175 38
Operating and maintenance,	-	-	-	119 25	3,461 36	\$1,965 75	5,546 36
North dormitory, . . . . .	-	-	-	1,391 40	-	-	1,391 40





## SCHEDULE B. — EXPENDITURES FOR FISCAL YEAR.

	Items.	Totals.
College expenses, . . . . .		\$432,516 87
Administration, . . . . .	\$38,597 06	
Maintenance, . . . . .	252,825 75	
Instruction, . . . . .	141,094 06	
Experiment station, . . . . .		108,171 07
Administration, . . . . .	888 49	
Feed inspection, . . . . .	6,925 28	
Fertilizer law, . . . . .	9,519 67	
Salaries, . . . . .	47,123 30	
Department, . . . . .	43,714 33	
Extension service, <sup>1</sup> . . . . .		73,243 56
Salaries, . . . . .	44,467 73	
Travel, . . . . .	12,947 46	
Departments, . . . . .	15,828 37	
Special appropriation, . . . . .		81,128 02
1917, improvements and equipment, . . . . .	17,568 40	
1917, market-garden field station, . . . . .	5,660 57	
1917, power plant improvements, . . . . .	29,531 07	
1918, improvements and equipment, . . . . .	8,048 18	
1918, power plant improvements, . . . . .	4,802 26	
1918, market-garden field station, . . . . .	5,853 48	
1918, dining hall improvements, . . . . .	9,502 54	
S. A. T. C. plumbing, . . . . .	181 52	
Totals, . . . . .	\$695,059 52	\$695,059 52

<sup>1</sup> Made up from State extension service and Smith-Lever funds.







## CURRENT ACCOUNTS.

*Disbursements and Receipts.*

ACCOUNTS.	Disbursements from Nov. 30, 1917, to Nov. 30, 1918.	Receipts from Nov. 30, 1917, to Nov. 30, 1918.	Apportionment for Year ending Nov. 30, 1918.	Balance to Credit.
Administration:—				
Dean's office, . . . . .	\$388 40	\$43 43	\$500 00	\$155 03
Executive order, . . . . .	5,649 07	14 91	6,200 00	565 84
President's office, . . . . .	1,828 64	26 00	1,500 00	—302 64
Registrar's office, . . . . .	592 26	—	600 00	7 74
Salaries, . . . . .	28,954 09	—	28,000 00	—954 09
Treasurer's office, . . . . .	1,184 60	—	1,200 00	15 40
State Treasurer, . . . . .	—	39,000 00	—	—
Maintenance, academic:—				
Agricultural economics, . . . . .	262 55	—	300 00	37 45
Agricultural education, . . . . .	323 67	—	285 00	—38 67
Agronomy, . . . . .	772 83	199 12	350 00	—223 81
Animal husbandry, . . . . .	376 50	139 50	425 00	188 00
Beekeeping, . . . . .	1,025 52	588 12	1,400 00	962 60
Botany, . . . . .	1,377 19	320 50	1,000 00	—56 69
Chemistry, . . . . .	3,093 18	1,545 92	2,350 00	802 74
Dairying, . . . . .	31,821 36	26,479 19	6,200 00	857 83
Economics and sociology, . . . . .	74 65	—	50 00	—24 65
Entomology, . . . . .	393 08	25 90	475 00	107 82
Farm management, . . . . .	349 61	138 56	300 00	88 95
Floriculture, . . . . .	5,873 28	2,407 98	2,875 00	—590 30
Forestry, . . . . .	120 81	7 00	150 00	36 19
Freshman agriculture, . . . . .	88 54	238 55	94 46 <sup>1</sup>	244 47
General agriculture, . . . . .	1,538 01	75	1,600 00	62 74
Horticultural manufacturing, . . . . .	1,893 63	374 33	1,450 00	—69 30
Hospital, . . . . .	1,565 61	280 32	1,200 00	—85 29
Landscape gardening, . . . . .	178 53	157 71	190 00	169 18
Language and literature, . . . . .	382 73	112 00	150 00	—120 73
Market gardening, . . . . .	5,037 99	3,423 29	1,450 00	—164 70
Market-garden field station, . . . . .	1,121 94	2,317 46	—	1,195 52
Mathematics, . . . . .	151 21	60 10	100 00	8 89
Microbiology, . . . . .	836 54	434 45	900 00	497 91
Military science, . . . . .	1,003 49	89 41	1,600 00	685 92
Mount Toby, . . . . .	7,139 81	357 00	500 00	—6,282 81
Physical education, . . . . .	452 64	—	450 00	—2 64
Physics, . . . . .	556 60	76 00	560 00	79 40
Pomology, . . . . .	3,340 64	2,635 05	1,275 00	569 41
Poultry husbandry, . . . . .	16,812 64	16,449 05	3,100 00	2,736 41
Rural engineering, . . . . .	544 47	191 00	275 00	—78 47
Rural sociology, . . . . .	101 87	—	150 00	48 13
Veterinary, . . . . .	920 54	20 12	1,100 00	199 58
War emergency, . . . . .	2,236 28	2,042 51	—1,458 77 <sup>1</sup>	—1,652 54
Women's dormitories, . . . . .	724 71	542 00	—	—182 71
Zoology and geology, . . . . .	243 55	175 38	100 00	31 63
1917 celebration, . . . . .	1,751 94	—	1,710 00	—41 94
Maintenance, general:—				
Farm, . . . . .	47,778 65	41,988 56	7,500 00	1,709 91
General horticulture, . . . . .	8,326 81	2,671 87	4,000 00	—1,654 94
Graduate school, . . . . .	82 57	—	100 00	17 43
Grounds, . . . . .	4,780 99	92 24	4,400 00	—288 75
Library, . . . . .	6,238 82	480 07	5,250 00	—508 75
Operating and maintenance, . . . . .	86,129 77	9,628 37	74,000 00	—12,129 77
State Treasurer, maintenance, . . . . .	—	115,000 00	—	—
Land, . . . . .	5,000 00	—	5,000 00	—
Endowment fund, . . . . .	—	10,613 32	—	—
Instruction:—				
Salaries, . . . . .	141,094 06	676 81	153,000 00	12,582 75
United States Treasurer, Morrill fund, . . . . .	—	16,666 66	—	—
United States Treasurer, Nelson fund, . . . . .	—	16,666 67	—	—
State Treasurer, instruction, . . . . .	—	115,000 00	—	—
Graduate school, . . . . .	—	3,000 00	—	—
Totals, . . . . .	\$432,516 87	\$433,397 18	\$325,270 00	—
Balance beginning fiscal year Dec. 1, 1917, . . . . .	—	18,266 00	—	—
Balance on hand Nov. 30, 1918, . . . . .	19,146 31 <sup>2</sup>	—	—	—
Totals, . . . . .	\$451,663 18	\$451,663 18	—	—

<sup>1</sup> Balance from previous year.<sup>2</sup> This amount has been increased by \$298.13 from experiment station to make it agree with the amount that we should have on hand from the Federal government.

## COLLEGE ACCOUNTS.

*Comparative Disbursements and Receipts for 1917-18.*

ACCOUNTS.	DISBURSEMENTS.		RECEIPTS.	
	1917.	1918.	1917.	1918.
Agricultural economics, . . . . .	\$224 12	\$262 55	-	-
Agricultural education, . . . . .	206 57	323 67	\$10 70	-
Agronomy, . . . . .	805 16	772 83	481 10	\$199 12
Animal husbandry, . . . . .	588 91	376 50	278 96	139 50
Beekeeping, . . . . .	1,865 19	1,025 52	467 83	588 12
Botany, . . . . .	1,415 68	1,377 19	1,112 52	320 50
Chemistry, . . . . .	4,639 72	3,093 18	2,808 46	1,545 92
Dairying, . . . . .	26,006 60	31,821 36	21,451 75	26,479 19
Dean's office, . . . . .	564 10	388 40	-	43 43
Economics and sociology, . . . . .	45 82	74 65	-	-
Entomology, . . . . .	517 83	393 08	126 44	25 90
Equipment, . . . . .	3,604 43	-	-	-
Executive order, . . . . .	6,169 82	5,649 07	10 50	14 91
Farm management, . . . . .	285 48	349 61	171 05	138 56
Farm, . . . . .	42,767 91	47,778 65	31,002 93	41,988 56
Floriculture, . . . . .	6,119 57	5,873 28	3,543 58	2,407 98
Forestry, . . . . .	283 99	120 81	109 00	7 00
Freshman agriculture, . . . . .	20 54	88 54	115 00	238 55
General agriculture, . . . . .	1,539 66	1,538 01	12 26	75
General horticulture, . . . . .	8,185 28	8,326 81	4,293 23	2,671 87
Graduate school, . . . . .	273 55	82 57	3 00	-
Grounds, . . . . .	4,360 68	4,780 99	109 57	92 24
History and government, . . . . .	4 03	-	-	-
Horticulture manufacturing, . . . . .	-	1,893 63	-	374 33
Hospital, . . . . .	1,848 25	1,565 61	90 00	280 32
Land, . . . . .	7,200 00	5,000 00	5,000 00	5,000 00
Landscape gardening, . . . . .	344 43	178 53	268 97	157 71
Language and literature, . . . . .	287 42	382 73	232 00	112 00
Library, . . . . .	6,844 99	6,238 82	501 10	480 07
Market gardening, . . . . .	4,116 42	5,037 99	2,885 44	3,423 29
Market-garden field station, . . . . .	-	1,121 94	-	2,317 46
Mathematics, . . . . .	215 45	151 21	107 75	60 10
Military, . . . . .	1,521 24	1,003 49	4 40	89 41
Microbiology, . . . . .	1,417 04	836 54	647 50	434 45
Mount Toby, . . . . .	52 96	7,139 81	-	357 00
Physical education, . . . . .	880 65	452 64	-	-
Physics, . . . . .	527 12	556 60	72 00	76 00
Pomology, . . . . .	3,402 54	3,340 64	2,089 48	2,635 05
Poultry husbandry, . . . . .	14,540 68	16,812 64	10,422 16	16,449 05
President's office, . . . . .	1,330 99	1,828 64	16 28	26 00
Registrar's office, . . . . .	590 92	592 26	-	-
Rural engineering, . . . . .	583 74	544 47	367 46	191 00
Rural sociology, . . . . .	149 72	101 87	-	-
Salaries, . . . . .	177,132 79	170,048 15	157 00	676 81
Treasurer's office, . . . . .	1,080 01	1,184 60	-	-
Veterinary science, . . . . .	1,076 81	920 54	90 14	20 12
War emergency, . . . . .	1,540 32	2,236 28	81 55	2,012 51
Women's dormitories, . . . . .	-	724 71	-	542 00
Zoölogy and geology, . . . . .	527 60	243 55	518 00	175 38
1917 celebration, . . . . .	2,106 67	1,751 94	-	-
Operating and maintenance, . . . . .	76,587 09	86,129 77	12,313 82	9,628 37
State Treasurer:—				
Endowment fund, . . . . .	-	-	10,613 32	10,613 32
Graduate school, . . . . .	-	-	3,000 00	3,000 00
Maintenance, . . . . .	-	-	121,500 00	110,000 00
Instruction, . . . . .	-	-	105,000 00	115,000 00
Administration, . . . . .	-	-	39,000 00	39,000 00
United States Treasurer:—				
Morrill fund, . . . . .	-	-	16,666 67	16,666 66
Nelson fund, . . . . .	-	-	16,666 66	16,666 67
Totals, . . . . .	\$416,399 99	\$432,516 87	\$414,419 58	\$433,397 18
Balance beginning fiscal year, . . . . .	-	-	19,696 41	18,266 00 <sup>1</sup>
Balance on hand at close of fiscal year, . . . . .	17,716 00 <sup>1</sup>	19,146 31	-	-
Totals, . . . . .	\$434,115 99	\$451,663 18	\$434,115 99	\$451,663 18

<sup>1</sup> Difference in balance due to an overdraft on land Dec. 1, 1917.

COLLEGE ACCOUNTS — *Concluded.**Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1917, . . . . .	-	\$18,266 00
Institution receipts Nov. 30, 1918, . . . . .	-	117,450 53
State Treasurer's receipts Nov. 30, 1918, . . . . .	-	282,613 32
United States Treasurer's receipts Nov. 30, 1918, . . . . .	-	33,333 33
Total disbursements, . . . . .	\$432,516 87	-
Bills receivable Dec. 1, 1917, deducted, . . . . .	\$432,516 87	\$451,663 18
Bills payable Dec. 1, 1917, deducted, . . . . .	3,781 30	10,034 55
	\$428,735 57	\$441,628 63
Bills receivable Nov. 30, 1918, . . . . .	-	5,972 27
Bills payable Nov. 30, 1918, . . . . .	7,961 55	-
Balance, . . . . .	10,903 78	-
	\$447,600 90	\$447,600 90

## FARM DISBURSEMENTS.

	Labor.	Equipment.	Feed.	Fertilizer.	Seeds.	Supplies.	Improvements.	Totals.
Cattle,	\$7,306 77	-	\$1,117 88	-	-	\$836 41	-	\$9,261 06
Dairy,	2,313 67	\$103 43	-	-	-	2,649 72	-	5,066 82
Horses,	2,081 02	-	2,652 85	-	-	1,321 11	-	6,054 98
Sheep,	556 15	-	-	-	-	72 59	-	628 74
Swine,	889 70	-	730 43	-	-	128 58	-	1,748 71
Field crops,	5,147 00	-	-	\$1,010 02	\$562 02	55 55	-	6,774 59
Miscellaneous,	1,837 48	-	-	-	-	97 80	\$1,267 15	3,202 43
Tools and machinery,	-	-	-	-	-	1,068 97	-	1,068 97
Live stock,	-	-	-	-	-	13,972 35	-	13,972 35
Totals,	\$20,131 79	\$103 43	\$4,501 16	\$1,010 02	\$562 02	\$20,203 08	\$1,267 15	\$47,778 65

## FARM CREDITS.

	Onions.	Milk.	Stock.	Sundry.	Hay.	Roots.	Labor.	Potatoes.	Totals.
Cattle,	-	-	\$4,510 00	\$269 93	-	-	\$33 42	-	\$4,813 35
Dairy,	-	\$27,174 09	-	71	-	-	-	-	27,174 80
Horses,	-	-	1,359 33	590 08	-	-	811 74	-	2,761 15
Sheep,	-	-	766 00	228 20	-	-	-	-	994 20
Swine,	-	-	2,647 94	-	-	-	-	-	2,647 94
Field crops,	\$33 85	-	-	46 20	\$175 07	\$0 50	-	\$2,386 50	2,642 12
Miscellaneous,	-	-	-	79 40	-	-	875 60	-	955 00
Totals,	\$33 85	\$27,174 09	\$9,283 27	\$1,214 52	\$175 07	\$0 50	\$1,720 76	\$2,386 50	\$41,988 56



AGRICULTURAL DIVISION.  
*Disbursements and Receipts.*

	Disbursements.	Receipts.
Agronomy, . . . . .	\$772 83	\$199 12
Animal husbandry, . . . . .	376 50	139 50
Dairying, . . . . .	31,821 36	26,479 19
Farm, . . . . .	47,778 65	41,988 56
Farm management, . . . . .	349 61	138 56
Poultry husbandry, . . . . .	16,812 64	16,449 05
Rural engineering, . . . . .	544 47	191 00
Division totals, . . . . .	\$98,456 06	\$85,584 98

*Summary.*

	Dr.	Cr.
By total division receipts, . . . . .		\$85,584 98
By bills receivable, . . . . .		3,683 50
By net apportionment, . . . . .		18,150 00
To total disbursements, . . . . .	\$98,456 06	
To bills payable, . . . . .	3,225 86	
Balance, . . . . .	5,736 56	
	\$107,418 48	\$107,418 48

*Inventory of Quick Assets.*

	Nov. 30, 1917.	Nov. 30, 1918.
Inventory of produce, . . . . .	\$12,668 84	\$10,550 24
Inventory of cattle, . . . . .	17,485 00	17,100 00
Inventory of swine, . . . . .	1,495 00	1,957 00
Inventory of horses, . . . . .	6,440 00	4,675 00
Inventory of poultry, . . . . .	2,531 75	2,682 10
Inventory of sheep, . . . . .	1,013 00	1,655 00
	\$41,633 59	\$38,619 34

HORTICULTURAL DIVISION.  
*Disbursements and Receipts.*

	Disbursements.	Receipts.
Floriculture, . . . . .	\$5,873 28	\$2,407 98
Forestry, . . . . .	120 81	7 00
General horticulture, . . . . .	8,326 81	2,671 87
Grounds, . . . . .	4,780 99	92 24
Landscape gardening, . . . . .	178 53	157 71
Market gardening, . . . . .	5,037 99	3,423 29
Pomology, . . . . .	3,340 64	2,635 05
Division totals, . . . . .	\$27,659 05	\$11,395 14

*Summary.*

	Dr.	Cr.
By total division receipts, . . . . .		\$11,395 14
By bills receivable, . . . . .		1,563 02
By net apportionment, . . . . .		14,340 00
To total division disbursements, . . . . .	\$27,659 05	
To bills payable, . . . . .	128 11	
By balance, . . . . .		459 00
	\$27,787 16	\$27,787 16

*Inventory of Quick Assets.*

	Nov. 30, 1917.	Nov. 30, 1918.
Mount Toby, . . . . .	—	\$9,260 00
Floriculture, . . . . .	\$1,200 00	1,200 00
Market gardening, . . . . .	917 50	805 00
Pomology, . . . . .	419 00	1,181 00
General horticulture (live stock), . . . . .	1,810 00	1,663 00
	\$4,346 50	\$14,109 00

EXPENSE OPERATING AND MAINTENANCE.

	Salaries.	Labor.	Fuel and Water.	Repairs.	Supplies.	Tools.	Architect.	Engineer.	Miscellaneous.	Totals.
General:—										
General superintendent,	\$3,529 49	—	—	—	—	—	—	—	—	\$3,529 49
Office,	680 00	—	—	—	\$163 30	—	—	—	—	843 30
General expense,	—	—	—	—	210 92	—	—	—	—	210 92
Power plant:—										
Heat,	—	\$8,666 46	\$49,542 99	\$1,014 53	72	—	—	—	—	59,224 70
Light,	—	978 92	29 61	255 07	—	—	—	—	—	1,263 60
Tools,	—	—	—	—	—	\$829 38	—	—	—	829 38
Amherst Water Company,	—	—	1,999 86	—	—	—	—	—	—	1,999 86
Night watchman,	—	1,517 34	—	—	—	—	—	—	—	1,517 34
Mail service,	—	391 50	—	—	—	—	—	—	—	391 50
Water mains,	—	109 12	—	—	—	—	—	—	—	109 12
Steam mains,	—	258 58	—	—	—	—	—	—	—	258 58
Electric light circuit,	—	1,173 09	—	—	—	—	—	—	—	1,173 09
Waiting station,	—	3 00	—	—	—	—	—	—	—	3 00
Miscellaneous sundry,	—	—	—	—	—	—	—	—	\$2,654 78	2,654 78
Sewers and cesspools,	—	171 19	—	—	—	—	—	—	—	171 19
Walks,	—	165 93	—	—	—	—	—	—	—	165 93
Emergency maintenance,	—	1,593 73	—	—	—	—	—	—	—	1,593 73
Expert service,	—	—	—	—	—	—	\$790 65	\$129 36	—	946 36
Fire department,	—	—	—	—	92 28	—	—	—	26 35	92 28
Totals,	\$4,209 49	\$15,028 86	\$51,572 46	\$1,269 60	\$467 22	\$829 38	\$790 65	\$129 36	\$2,681 13	\$76,978 15

EXPENSE OPERATING AND MAINTENANCE — *Concluded.*

	Electric Repairs.	Plumbing Repairs.	Heat Repairs.	C. and M. Repairs.	Janitor.	Bell Ringing.	Sundry.	Totals.
College buildings:—								
Animal husbandry building,	\$0 95	\$1 65	\$0 46	\$0 83	—	—	—	\$3 89
Apiary building,	4 17	—	—	10 90	—	—	—	15 07
Chemical building,	8 21	21 09	10 64	249 01	—	—	—	288 95
Clark Hall,	2 79	69 17	13 75	57 76	—	—	—	143 47
Cold-storage building,	—	—	—	45	—	—	—	45
Dairy building,	12 11	51 01	74 55	142 46	—	—	—	280 13
Dairy barn and storage,	5 21	58 05	32 50	81 76	—	—	—	177 52
Draper Hall,	36 80	498 28	47 84	270 74	—	—	—	1,451 30
Drill hall,	48	77 41	69	64 13	—	—	—	142 71
Durfee glasshouse (old),	—	3 32	—	46 51	—	—	—	49 83
Entomology building,	98	24 17	46 37	41 74	—	—	—	113 26
French Hall,	74 50	4 22	7 95	43 97	—	—	—	87 34
Horse barn,	—	5 56	1 25	10 62	—	—	—	50 78
Horticulture barn,	2 90	—	0 81	51 28	—	—	—	23 33
Hospital,	3 54	9 46	6 84	6 28	—	—	—	71 12
Machine barn,	—	—	—	—	—	—	—	6 28
Mathematics building,	—	—	5 54	—	—	—	—	5 54
Microbiology building,	31 88	93 82	2 80	3 95	—	—	—	132 45
Physics building,	—	7 04	—	7 38	—	—	—	14 42
Piggery,	—	2 50	—	2 40	—	—	—	4 90
Poultry, No. 1,	—	1 00	—	17 83	—	—	—	19 75
Poultry No. 2,	48	—	—	53	—	—	—	1 01
Poultry No. 3,	—	11 37	—	62	—	—	—	11 99
Poultry No. 4,	—	15 34	—	15 89	—	—	—	31 23
Poultry No. 5,	—	—	—	3 16	—	—	—	3 16
Poultry No. 6,	—	—	—	61	—	—	—	61
Poultry No. 7,	—	—	—	11 23	—	—	—	11 23
Poultry No. 8,	—	—	—	15 99	—	—	—	15 99
Poultry No. 9,	—	—	—	3 89	—	—	—	3 89
Poultry No. 10,	—	—	—	3 39	—	—	—	3 39
Poultry No. 11,	—	—	—	3 20	—	—	—	3 20
Poultry No. 12,	—	—	—	—	—	—	—	—
Power building,	130 73	25 89	72 09	62 84	\$167 92	—	—	459 47
Rural engineering building,	—	2 16	1 07	15 24	—	—	—	16 31
Sheep barn,	—	—	—	—	—	—	—	2 16
Stockbridge Hall,	9 65	20 53	20 71	74 87	—	—	—	125 76



[illegible]

### Summary.

General,	.	.	.	.	.	.	.	\$76,978	15	.
College buildings,	.	.	.	.	.	.	.	6,440	30	.
College residences,	.	.	.	.	.	.	.	2,711	32	.
Total,	.	.	.	.	.	.	.	\$86,129	77	.

EXPERIMENT STATION.  
*Disbursements and Receipts.*

ACCOUNTS.	Disbursements from Dec. 1, 1917, to Nov. 30, 1918.	Receipts from Dec. 1, 1917, to Nov. 30, 1918.	Apportionment for Year ending Nov. 30, 1918.	Balance to Credit.
Administration, . . . . .	\$888 49	\$40 65	\$1,200 00	\$352 16
Agriculture, . . . . .	9,627 26	6,064 36	3,100 00	—462 90
Agricultural economics, . . . . .	355 71	—	900 00	544 29
Apiculture, . . . . .	—	—	120 00	120 00
Botanical, . . . . .	2,202 50	—	2,250 00	47 50
Chemical, . . . . .	14,641 14	13,423 39	1,150 00	—67 75
Cranberry, . . . . .	5,705 37	6,220 20	3,800 00	4,314 83
Entomological, . . . . .	603 71	—	625 00	21 29
Equipment, . . . . .	11 00	—	750 00	739 00
Feed inspection, . . . . .	6,925 28	6,053 00	1,275 50 <sup>1</sup>	403 22
Fertilizer inspection, . . . . .	9,519 67	7,007 50	612 41 <sup>1</sup>	—1,899 76
Freight and express, . . . . .	334 71	8 65	400 00	73 94
Graves' orchard, . . . . .	126 38	1,004 50	—	878 12
Horticultural, . . . . .	2,142 69	61 66	1,800 00	—281 03
Library, . . . . .	218 39	—	700 00	481 61
Meteorology, . . . . .	325 82	—	400 00	74 18
Microbiology, . . . . .	947 61	—	1,500 00	552 39
Poultry, . . . . .	2,316 15	19 63	2,000 00	—296 52
Pomology, . . . . .	—	3 40	—	3 40
Publications, . . . . .	247 94	—	800 00	552 06
Salaries, . . . . .	47,123 30	—	52,205 00	5,081 70
Tillson farm, . . . . .	3,390 51	1,010 94	2,000 00	—379 57
Treasurer's office, . . . . .	246 46	—	400 00	153 54
Veterinary, . . . . .	270 98	206 35	725 00	660 37
Hatch fund, . . . . .	—	15,000 00	—	—
Adams fund, . . . . .	—	15,000 00	—	—
State fund, . . . . .	—	40,000 00	—	—
Totals, . . . . .	\$108,171 07	\$111,124 23	\$76,825 00	—
Balance beginning fiscal year Dec. 1, 1917.	—	8,688 34	—	—
Balance on hand Nov. 30, 1918, . . . . .	11,641 50 <sup>2</sup>	—	—	—
Totals, . . . . .	\$119,812 57	\$119,812 57	—	—

<sup>1</sup> Balance from previous year.<sup>2</sup> \$298.13 taken to balance the college account, and \$8,406.08 transferred to the State Treasurer under date of November 30.

EXPERIMENT STATION — *Continued.*  
*Comparative Disbursements and Receipts, 1917-18.*

ACCOUNTS.	DISBURSEMENTS.		RECEIPTS.	
	1917.	1918.	1917.	1918.
Administration, . . . . .	\$1,234 51	\$888 49	\$3 48	\$40 65
Agriculture, . . . . .	8,490 16	9,627 26	4,810 22	6,064 36
Agricultural economics, . . . . .	368 21	355 71	-	-
Apiculture, . . . . .	51 12	-	-	-
Botanical, . . . . .	2,103 43	2,202 50	32 90	-
Chemical, . . . . .	12,970 28	14,641 14	11,939 54	13,423 39
Cranberry, . . . . .	3,528 49	5,705 37	3,172 02	6,220 20
Entomological, . . . . .	413 18	603 71	75	-
Equipment, . . . . .	197 72	11 00	-	-
Feed inspection, . . . . .	6,772 57	6,925 28	6,000 00	6,053 00
Fertilizer inspection, . . . . .	9,287 40	9,519 67	9,040 00	7,007 50
Freight and express, . . . . .	256 70	334 71	5 51	8 65
Graves' orchard, . . . . .	533 64	126 38	133 48	1,004 50
Horticultural, . . . . .	1,832 30	2,142 69	7 85	61 66
Library, . . . . .	518 51	218 39	-	-
Meteorology, . . . . .	358 22	325 82	-	-
Microbiology, . . . . .	1,704 14	947 61	-	-
Poultry, . . . . .	1,907 25	2,316 15	-	19 63
Pomology, . . . . .	-	-	-	3 40
Publications, . . . . .	735 22	247 94	-	-
Salaries, . . . . .	45,271 80	47,123 30	-	-
Tillson farm, . . . . .	1,666 66	3,390 51	1,120 55	1,010 94
Treasurer's office, . . . . .	336 59	246 46	-	-
Veterinary, <sup>1</sup> . . . . .	1,123 57	270 98	560 31	206 35
Hatch fund, . . . . .	-	-	15,000 00	15,000 00
Adams fund, . . . . .	-	-	15,000 00	15,000 00
State fund, . . . . .	-	-	35,000 00	40,000 00
Totals, . . . . .	\$101,661 67	\$108,171 07	\$101,826 61	\$111,124 23
Balance beginning of fiscal year, . .	-	-	8,523 40	8,688 34
Balance on hand at close of fiscal year,	8,688 34	11,641 50	-	-
Totals, . . . . .	\$110,350 01	\$119,812 57	\$110,350 01	\$119,812 57

<sup>1</sup> This includes blood test.

EXPERIMENT STATION — *Concluded.**Analysis of Experiment Station Accounts.*

	Adams Fund.	Feed Law.	Fertilizer Law.	Hatch Fund.	State Fund.	Totals.
Salaries, . . . . .	\$14,987 31	\$4,114 64	\$6,614 16	\$13,890 68	\$18,245 31	\$57,852 10
Labor, . . . . .	192 05	303 79	524 86	1,109 55	26,361 25	28,491 50
Publications, . . . . .	-	348 20	670 80	-	181 00	1,200 00
Postage and stationery, . .	-	30 94	99 34	-	1,148 02	1,278 30
Freight and express, . .	-	41 36	26 57	-	416 99	484 92
Heat, light, water and power, . . . . .	-	61 31	110 06	-	447 13	618 50
Chemical and laboratory supplies, . . . . .	78 05	456 63	533 19	20 59	1,114 36	2,202 82
Seeds, plants and sundry supplies, . . . . .	126 30	83 65	63 79	33 23	3,613 75	3,920 72
Fertilizers, . . . . .	-	-	-	78 29	1,649 62	1,727 91
Feed stuffs, . . . . .	-	54 40	-	6 30	2,479 43	2,540 13
Library, . . . . .	-	-	2 50	-	320 95	323 45
Tools, machinery and ap- pliances, . . . . .	-	35 00	-	-	378 77	413 77
Furniture and fixtures, . .	-	83 73	-	1 20	115 61	200 54
Scientific apparatus and specimens, . . . . .	18 00	-	39 98	5 32	178 20	241 50
Live stock, . . . . .	-	25 00	-	-	155 00	180 00
Traveling expenses, . . . .	-	867 63	834 42	-	3,230 24	4,932 29
Contingent expenses, . . .	-	5 00	-	-	20 00	25 00
Buildings and land, . . . .	-	414 00	-	-	1,123 62	1,537 62
Totals, . . . . .	\$15,401 71	\$6,925 28	\$9,519 67	\$15,145 16	\$61,179 25	\$108,171 07

*Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1917, . . . . .	-	\$8,688 34
Receipts from State Treasurer, . . . . .	-	46,000 00
Receipts from United States Treasurer, . . . . .	-	30,000 00
Receipts from other sources, . . . . .	-	35,124 23
Total disbursements, . . . . .	\$108,171 07	-
Bills receivable Dec. 1, 1917, deducted, . . . . .	\$108,171 07	\$119,812 57
Bills payable Dec. 1, 1917, deducted, . . . . .	218 78	4,452 97
Bills receivable Nov. 30, 1918, . . . . .	\$107,952 29	\$115,359 60
Bills payable Nov. 30, 1918, . . . . .	424 64	2,599 44
Balance, . . . . .	9,582 11	-
	\$117,959 04	\$117,959 04



## EXTENSION SERVICE.

*Disbursements and Receipts.*

CLASSIFICATION.	Disbursements.	Receipts.	Apportionment.	Balance.
Administration, . . . . .	\$997 47	\$166 22	\$2,000 00	\$1,168 75
Animal husbandry, . . . . .	416 28	-	700 00	283 72
Beekeeping, . . . . .	99 16	-	-	-99 16
Co-operative marketing, . . . . .	867 39	-	300 00	-567 39
Correspondence courses, . . . . .	901 41	394 25	800 00	292 84
County agents' work, . . . . .	995 47	-	1,000 00	4 53
Dairying, . . . . .	285 72	-	500 00	214 28
Director's office, . . . . .	2,461 83	115 33	2,300 00	-46 50
Exhibits, . . . . .	939 48	282 50	600 00	-56 98
Farm management demonstration, . . . . .	200 88	56 25	250 00	105 37
Home economics, . . . . .	746 56	13 04	1,165 35	431 83
Home gardening, . . . . .	46 42	-	-	-46 42
Horticulture manufacturing, . . . . .	68 56	11 25	150 00	92 69
Injurious insects, . . . . .	56	-	-	-56
Junior extension work, . . . . .	2,359 71	46 10	2,400 00	86 39
Lectures, . . . . .	53 12	-	300 00	246 88
Library extension, . . . . .	198 99	-	200 00	1 01
Local community organization, . . . . .	949 64	-	700 00	-249 64
Plant diseases, . . . . .	2 25	-	50 00	47 75
Pomology, . . . . .	554 50	-	1,000 00	445 50
Poultry husbandry, . . . . .	826 28	60 04	1,000 00	233 76
Printing, . . . . .	2,161 04	385 77	1,050 00	-725 27
Rural civic planning, . . . . .	26 70	156 09	50 00	179 39
Salaries, . . . . .	29,533 11	691 66	27,620 00	-1,221 45
Sheep husbandry, . . . . .	35 80	-	50 00	14 20
Short courses, . . . . .	6,555 29	1,174 12	8,400 00	3,018 83
War emergency, . . . . .	1,558 09	45 97	37 49	-1,474 63
State Treasurer, . . . . .	-	50,000 00	-	-
Totals, . . . . .	\$53,841 71	\$53,598 59	\$52,622 84	\$2,379 72
Balance beginning fiscal year Dec. 1, 1917, . . . . .	-	2,622 84	-	-
Balance on hand Nov. 30, 1918, . . . . .	2,379 72 <sup>1</sup>	-	-	-
Totals, . . . . .	\$56,221 43	\$56,221 43	-	-

<sup>1</sup> This amount transferred to the State Treasurer under date of November 30.

*Summary.*

	Disbursements.	Receipts.
Balance Dec. 1, 1917, <sup>1</sup> . . . . .	-	\$5,606 32
Receipts Nov. 30, 1918, . . . . .	-	3,598 59
Received from State Treasurer, . . . . .	-	50,000 00
Received from United States Treasurer, . . . . .	-	19,036 48
Disbursements to Nov. 30, 1918, <sup>1</sup> . . . . .	\$73,243 56	-
	\$73,243 56	\$78,241 39
Bills receivable Dec. 1, 1917, deducted, . . . . .	-	776 12
Bills payable Dec. 1, 1917, deducted, . . . . .	139 72	-
	\$73,103 84	\$77,465 27
Bills receivable Nov. 30, 1918, . . . . .	-	138 03
Bills payable Nov. 30, 1918, . . . . .	69 25	-
Balance, . . . . .	4,430 21	-
	\$77,603 30	\$77,603 30

<sup>1</sup> Includes Federal Smith-Lever fund.

EXTENSION SERVICE — *Concluded.*  
*Analysis of Extension Service Disbursements.*

	Travel.	Equipment.	Supplies.	Instruction and Lectures.	Salaries.	Miscel- laneous.	Labor.	Totals.
Administration, . . . . .	\$878 74	\$14 00	\$104 73	-	-	-	-	\$997 47
Animal husbandry, . . . . .	382 45	2 75	31 08	-	-	-	-	416 28
Agricultural camps, . . . . .	-	-	2 00	-	-	-	-	37 68
Beekeeping, . . . . .	-	-	76 36	-	-	-	\$35 68	99 16
Correspondence courses, . . . . .	74 97	23 60	719 26	-	-	-	22 80	901 41
Co-operative marketing, . . . . .	574 64	46 50	246 25	-	-	-	83 58	867 39
County agents' work, . . . . .	807 91	71 73	115 83	-	-	-	-	995 47
County agents' conference, . . . . .	35 67	-	79 05	-	-	-	-	114 72
Dairying, . . . . .	150 72	5 87	129 13	-	-	-	-	285 72
Director's office, . . . . .	107 39	408 36	1,627 41	-	-	-	318 67	2,461 83
Exhibits, . . . . .	521 91	66 00	332 30	-	-	-	19 27	939 48
Farm management demonstration, . . . . .	-	2 87	163 01	-	-	-	35 00	200 88
Farmers' week, . . . . .	210 80	-	442 09	\$105 00	-	-	-	757 89
Home economics, . . . . .	348 82	52 53	298 23	-	-	-	46 98	746 56
Home gardening, . . . . .	-	28 10	18 32	-	-	-	-	46 42
Horticulture manufacturing, . . . . .	52 13	-	16 43	-	-	-	-	68 56
Injurious insects, . . . . .	-	-	56	-	-	-	-	56
Junior extension work, . . . . .	1,519 38	106 09	554 80	-	-	-	179 44	2,359 71
Lectures, . . . . .	47 85	-	5 27	-	-	-	-	53 12
Library extension, . . . . .	-	188 21	10 78	-	-	-	-	198 99
Local community organization, . . . . .	702 01	-	215 21	-	-	-	32 42	949 64
Miscellaneous schools, . . . . .	-	-	36 53	-	-	-	-	36 53
Plant diseases, . . . . .	-	-	2 25	-	-	-	-	2 25
Pomology, . . . . .	441 74	66 68	46 08	-	-	-	-	554 50
Poultry convention, . . . . .	58 77	203 54	203 54	45 00	-	-	-	307 31
Poultry husbandry, . . . . .	568 18	32 96	225 14	-	-	-	-	826 28
Printing, . . . . .	81 34	-	2,079 70	-	-	-	-	2,161 04
Rural civic planning, . . . . .	22 50	-	4 20	-	-	-	-	26 70
Salaries, . . . . .	-	-	-	-	\$30,683 12	-	-	30,683 12
Sheep husbandry, . . . . .	-	10 95	24 85	-	-	-	-	35 80
Summer school, . . . . .	59 54	-	399 70	1,833 00	-	\$431 41	-	2,723 65
Ten weeks' course, . . . . .	72 87	-	321 68	100 00	-	878 41	-	1,372 96
Tractor school, . . . . .	5 98	-	48 56	-	-	-	-	54 54
War emergency, . . . . .	425 76	91 13	398 71	-	412 06	-	230 43	1,558 09
Totals, . . . . .	\$8,152 07	\$1,218 33	\$8,979 04	\$2,083 00	\$31,095 18	\$1,309 82	\$1,004 27	\$53,841 71

## SMITH-LEVER FUND (FEDERAL).

	Disbursements.	Receipts.
Beekeeping, . . . . .	\$7 37	-
Dairying, . . . . .	448 72	-
Extension schools, . . . . .	206 70	-
District and county agents, . . . . .	-	-
Farm management demonstration, . . . . .	394 97	-
Home gardening, . . . . .	647 60	-
Horticulture manufacturing, . . . . .	104 97	-
Junior extension work, . . . . .	1,663 73	-
Plant diseases, . . . . .	464 29	-
Poultry husbandry, . . . . .	364 55	-
Printing and publications, . . . . .	756 16	-
Salaries, . . . . .	13,784 61	-
Sheep husbandry, . . . . .	558 18	-
State Treasurer, . . . . .	-	\$19,036 48
Totals, . . . . .	\$19,401 85	\$19,036 48
Balance beginning of fiscal year Dec. 1, 1917, . . . . .	-	2,983 48
Balance on hand Nov. 30, 1918, . . . . .	2,618 11	-
Totals, . . . . .	\$22,019 96	\$22,019 96

## SPECIAL APPROPRIATIONS.

	Date made.	Appropriation.	Amount expended to Date.	Unexpended Balance.
Agricultural building, . . . . .	1914	\$210,000 00	\$209,074 65	\$925 35
Microbiology building, . . . . .	1915	67,500 00	65,450 31	2,049 69
Agricultural building, . . . . .	1916	13,732 34	12,243 49	1,488 85
Rural engineering building, . . . . .	1916	12,000 00	11,997 57	2 43
Market-garden field station, . . . . .	1916	8,000 00	8,000 00	-
Improvement and equipment, . . . . .	1917	33,500 00	32,786 52	713 48
Market-garden field station, . . . . .	1917	10,000 00	10,000 00	-
Power plant improvements, . . . . .	1917	40,000 00	36,948 78	3,051 22
Improvement and equipment, . . . . .	1918	20,000 00	8,048 18	11,951 82
Power plant improvements, . . . . .	1918	54,500 00	4,802 26	49,697 74
Market-garden field station, . . . . .	1918	16,500 00	5,833 48	10,666 52
Dining hall, . . . . .	1918	12,000 00	9,502 54	2,497 46
Totals, . . . . .	-	\$497,732 34	\$414,687 78	\$83,044 56
Amount spent previous to Dec. 1, 1917, . . . . .	-	-	-	386,554 41
Amount expended during fiscal year, . . . . .	-	-	-	28,133 37
Unexpended balance Nov. 30, 1918, . . . . .	-	-	83,044 56	-
	-	\$497,732 34	\$497,732 34	\$497,732 34

## INVENTORY — REAL ESTATE.

*Land (Estimated Value).*

Angus land, . . . . .	\$800 00
Allen place, . . . . .	500 00
Baker place, . . . . .	2,500 00
Bangs place, . . . . .	2,350 00
Brown land, . . . . .	500 00
Charmbury place, . . . . .	450 00
Clark place, . . . . .	4,500 00
College farm, . . . . .	37,000 00
Cranberry land, . . . . .	10,975 50
Geo. Cutler, Jr., trustee, . . . . .	2,700 00
Dickinson land, . . . . .	7,850 00
Harlow farm, . . . . .	1,584 63
Hawley and Brown place, . . . . .	675 00
Kellogg place, . . . . .	3,368 45
Loomis place, . . . . .	415 00
Louisa Baker place, . . . . .	5,000 00
Market-garden field station, . . . . .	4,800 00
Mount Toby demonstration forest, . . . . .	30,000 00
Newell farm, . . . . .	2,800 00
Old creamery place, . . . . .	1,000 00
Owen farm, . . . . .	5,000 00
Pelham quarry, . . . . .	500 00
Tillson farm, . . . . .	2,950 00
Westcott place, . . . . .	2,250 00
Total, . . . . .	\$130,468 58

*College Buildings (Estimated Value).*

	Inventory at Beginning of Year.	Per Cent. de- ducted.	Value at Beginning of Year less De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Apiary, . . . . .	\$3,089 76	2	\$3,027 96	\$15 07	\$3,043 03
Animal husbandry building, . . . . .	9,578 24	2	9,386 68	3 89	9,390 57
Cashier's house, . . . . .	954 47	5	906 75	754 15	1,660 90
Chemical laboratory, . . . . .	8,317 90	5	7,902 00	288 95	8,190 95
Clark Hall, . . . . .	64,493 78	2	63,203 90	791 70	63,995 60
Cold-storage laboratory, . . . . .	11,417 98	2	11,189 62	45	11,190 07
Dairy building, . . . . .	72,308 71	2	70,862 54	364 32	71,226 86
Dairy barn and storage, . . . . .	28,270 22	3	27,422 11	177 52	27,599 63
Dining hall, . . . . .	56,995 88	3	55,286 00	10,511 49	65,797 49
Drill hall and gun shed, . . . . .	9,166 61	5	8,708 28	182 96	8,891 24
Durfee glass houses, old, . . . . .	8,981 62	5	8,532 54	49 83	8,582 37
Durfee glass houses, new, . . . . .	13,155 49	5	12,497 72	—	12,497 72
Entomology building, . . . . .	76,212 29	2	74,688 04	113 26	74,801 30
Farm bungalow, . . . . .	2,049 85	3	1,988 35	665 50	2,653 85
Farmhouse, . . . . .	2,538 40	3	2,462 25	29 99	2,492 24
Farmhouse No. 2, . . . . .	4,167 34	8	3,833 95	678 57	4,512 52
French Hall, . . . . .	47,942 97	2	46,984 11	87 34	47,071 45
Grounds' tool shed, . . . . .	—	—	—	—	245 00
Harlow house, . . . . .	1,615 00	5	1,534 25	69 30	1,603 55
Horse barn, . . . . .	4,741 21	3	4,598 97	50 78	4,649 75
Head of division of horticulture, . . . . .	2,441 74	5	2,319 65	22 87	2,342 52
Horticultural barn, . . . . .	2,484 89	3	2,410 34	23 33	2,433 67
Horticultural tool shed, . . . . .	1,825 35	3	1,770 59	—	1,770 59



*College Buildings (Estimated Value) — Concluded.*

	Inventory at Beginning of Year.	Per Cent. de- ducted.	Value at Beginning of Year less De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Hospital, . . . . .	\$14,953 17	2	\$14,654 11	\$263 38	\$14,917 49
Kellogg house, . . . . .	2,384 09	5	2,264 89	104 61	2,369 50
Machinery barn, . . . . .	3,669 14	3	3,559 07	6 28	3,565 35
Market-garden field station barn, . . . . .	3,500 00	3	3,395 00	—	3,395 00
Mathematical building, . . . . .	5,452 15	5	5,179 54	5 54	5,185 08
Microbiology building, . . . . .	61,070 77	2	59,849 35	132 45	59,981 80
Military storage, . . . . .	—	—	—	—	250 00
Mount Toby house and barn, . . . . .	3,800 00	5	3,610 00	397 18	4,007 18
North dormitory, . . . . .	24,781 10	2	24,285 48	265 16	24,550 64
Physics laboratory, . . . . .	4,904 27	5	4,659 06	14 42	4,673 48
Piggery, . . . . .	2,750 59	3	2,668 07	4 90	2,672 97
Poultry department: —					
No. 1 demonstration building, . . . . .	1,361 60	2	1,334 37	19 75	1,354 12
No. 2 oil house, . . . . .	72 03	2	70 59	1 01	71 60
No. 3 brooder, killing and fattening laboratory, . . . . .	2,416 43	2	2,368 10	11 99	2,380 09
No. 4 mechanics, storage building and incubator cellar, . . . . .	3,483 51	2	3,413 84	31 23	3,445 07
No. 5 laying house, . . . . .	1,694 15	2	1,660 27	3 16	1,663 43
No. 6 manure shed, . . . . .	96 04	2	94 12	61	94 73
No. 7 small henhouse, . . . . .	48 02	2	47 06	61	47 67
No. 8 breeding house, . . . . .	1,523 91	2	1,493 43	11 23	1,504 66
No. 9 experimental breeding house, . . . . .	588 00	2	576 24	15 99	592 23
No. 10 duck house, . . . . .	96 04	2	94 12	3 89	98 01
No. 11 unit house for 200 hens, . . . . .	502 51	2	492 46	3 39	495 85
No. 12 unit house for 100 hens, . . . . .	405 00	2	396 90	3 20	400 10
Power plant and storage building, in- cluding coal pocket, . . . . .	38,596 88	2	37,824 94	9,585 59	47,410 53
President's house, . . . . .	12,142 13	3	11,777 87	180 96	11,958 83
Quarantine barn, . . . . .	501 97	3	486 91	—	486 91
Rural engineering building, . . . . .	3,641 55	2	3,568 72	16 31	3,585 03
Sheep barn, . . . . .	1,419 32	3	1,376 74	80 57	1,457 31
South dormitory, . . . . .	35,346 29	2	34,639 36	451 54	35,090 90
Stockbridge Hall, . . . . .	178,306 88	2	174,740 74	602 00	175,342 74
Agronomy greenhouse, . . . . .	2,064 86	2	2,023 56	15 53	2,039 09
Stockbridge house, . . . . .	1,426 66	5	1,355 33	51 90	1,407 23
Stone chapel, . . . . .	28,576 68	2	28,005 15	318 52	28,323 67
Vegetable plant house, . . . . .	4,184 51	5	3,975 28	390 96	4,366 24
Veterinary laboratory and stable, . . . . .	22,966 16	2	22,506 84	12 19	22,519 03
Waiting station, . . . . .	482 96	2	473 30	3 00	476 30
Wildier Hall, . . . . .	35,498 45	2	34,788 48	182 58	34,971 06
Young stock barn, . . . . .	6,055 16	3	5,873 51	74 65	5,948 16
Totals, . . . . .	\$943,512 68	—	\$921,099 40	\$28,147 55	\$949,741 95

*College Equipment (Estimated Value).*

## Administrative division: —

Dean's office, . . . . .	\$464 05
President's office, . . . . .	1,953 50
Registrar's office, . . . . .	1,117 21
Treasurer's office, . . . . .	2,816 25

## Agricultural division: —

Agronomy, . . . . .	6,172 02
Animal husbandry, . . . . .	772 64
Dairy, . . . . .	18,604 35
Farm, . . . . .	41,369 13
Farm management, . . . . .	1,025 19
General agriculture, . . . . .	3,999 85
Poultry, . . . . .	6,809 10
Rural engineering, . . . . .	3,783 73

Dining hall, . . . . .	\$19,281 85
Extension, . . . . .	8,636 58
General science:—	
Apiary, . . . . .	2,218 11
Botanical, . . . . .	22,794 53
Chemical, . . . . .	11,736 58
Entomology, . . . . .	6,073 30
Mathematics, . . . . .	2,434 50
Microbiology, . . . . .	6,926 35
Physics, . . . . .	6,814 32
Veterinary, . . . . .	10,636 47
Zoölogical and geological, . . . . .	17,154 28
Graduate school, . . . . .	55 20
Horticultural division:—	
Floriculture, . . . . .	29,850 66
Forestry, . . . . .	2,158 04
General horticulture, . . . . .	6,632 68
Grounds, . . . . .	1,261 05
Horticultural manufacture, . . . . .	2,760 70
Landscape gardening, . . . . .	5,088 47
Market-garden field station, . . . . .	2,435 05
Market gardening, . . . . .	2,757 35
Mount Toby reservation, . . . . .	9,732 80
Pomology, . . . . .	6,090 91
Hospital, . . . . .	1,089 10
Humanities division:—	
Economics and sociology, . . . . .	199 52
Language and literature, . . . . .	574 00
Library, . . . . .	101,220 72
Military, . . . . .	1,517 15
Operating and maintenance:—	
College supply, . . . . .	1,913 64
Fire apparatus, . . . . .	2,146 15
General maintenance, . . . . .	161,625 34
Carpentry and masonry supplies, . . . . .	\$6,068 04
Electrical supplies, . . . . .	3,258 31
Equipment, . . . . .	142,246 79
Heating and plumbing supplies, . . . . .	8,804 41
Painting supplies, . . . . .	1,247 79
Janitor's supplies, . . . . .	959 34
Sewer line, . . . . .	11,997 73
Water mains, . . . . .	10,472 46
Physical education, . . . . .	2,196 75
Rural social science:—	
Agricultural economics, . . . . .	884 55
Agricultural education, . . . . .	640 56
Rural sociology, . . . . .	215 24
Textbooks, . . . . .	2,269 14
Trophy room, . . . . .	1,200 00
Total, . . . . .	\$573,538 19

*Experiment Station Buildings (Estimated Value).*

	Inventory at Beginning of Year.	Per Cent.	Cost at Beginning of Year less Per Cent. De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Year.
Agricultural laboratory, . . . . .	\$14,704 49	2	\$14,410 40	\$72 92	\$14,483 32
Agricultural barn, . . . . .	4,684 65	3	4,544 11	41 12	4,585 23
Agricultural farmhouse, . . . . .	1,375 40	3	1,334 14	100 38	1,434 52
Agricultural glass house, . . . . .	428 69	5	407 26	—	407 26
Cranberry buildings, . . . . .	2,365 50	5	2,247 22	471 29	2,718 51
Plant and animal chemistry laboratory, . . . . .	28,659 61	2	28,086 42	120 84	28,207 26
Plant and animal chemistry barns, . . . . .	3,964 99	3	3,846 04	206 22	4,052 26
Plant and animal chemistry dairy, . . . . .	1,825 35	3	1,770 59	—	1,770 59
Six poultry houses, . . . . .	585 72	2	574 01	—	574 01
Entomological glass houses, . . . . .	782 33	5	743 21	12 83	756 04
Tillson house, . . . . .	600 00	5	570 00	93	570 93
Tillson barn, . . . . .	1,200 00	5	1,140 00	—	1,140 00
Totals, . . . . .	\$61,176 73	—	\$59,673 40	\$1,026 53	\$60,699 93

*Experiment Station Equipment (Estimated Value).*

Agricultural economics department, . . . . .	\$58 27
Agricultural laboratory, . . . . .	7,171 29
Botanical laboratory, . . . . .	5,651 32
Chemical laboratory, . . . . .	23,106 82
Cranberry station, . . . . .	17,855 31
Director's office, . . . . .	5,602 15
Entomological laboratory, . . . . .	23,587 92
Horticultural laboratory, . . . . .	4,507 65
Meteorological laboratory, . . . . .	798 50
Microbiological laboratory, . . . . .	1,651 25
Poultry department, . . . . .	4,712 79
Treasurer's office, . . . . .	1,092 00
Tillson farm, . . . . .	500 00
Total, . . . . .	\$96,295 27

*Inventory Summary.*

Land, . . . . .	\$130,468 58
College buildings, . . . . .	949,741 95
College equipment, . . . . .	573,538 19
Experiment station buildings, . . . . .	60,699 93
Experiment station equipment, . . . . .	96,295 27
Total, . . . . .	\$1,810,743 92
Acres.	
College estate, area, . . . . .	642.79
Cranberry station, Wareham, area, . . . . .	23.67
Market-garden field station, Lexington, area, . . . . .	12.00
Mount Toby demonstration forest, area, . . . . .	755.27
Rifle range, . . . . .	46.20
Pelham quarry, . . . . .	.50
Total acreage, . . . . .	1,480.43

## STUDENTS' TRUST FUND ACCOUNT.

	Disbursements, Year ending Nov. 30, 1918.	Receipts, Year ending Nov. 30, 1918.	Balance on Hand.	Balance brought forward Dec. 1, 1917.
Athletics, . . . . .	\$2,856 62	\$738 03	\$172 84	\$2,291 43
Dining hall, . . . . .	39,829 59	33,363 04	-23,680 65	-17,214 10
Keys, . . . . .	53 00	37 50	18 25	33 75
Student deposits, . . . . .	18,927 68	19,167 78	10,568 65	10,328 55
Social union, . . . . .	852 64	219 70	316 92	949 86
Textbooks, . . . . .	3,365 94	3,586 55	998 67	778 06
Athletic field, . . . . .	-	18 50	-354 71	-373 21
Uniforms, . . . . .	1,945 77	38 17	21 04	1,928 64
Totals, . . . . .	\$67,831 24	\$57,169 27	-\$11,938 99	-\$1,277 02
Balance on hand Dec. 1, 1917, . . . . .	-1,277 02	-	-	-
Balance on hand Nov. 30, 1918, . . . . .	-	-11,938 99	-	-
	\$69,108 26	\$69,108 26	-	-

## CONDENSED OPERATING STATEMENT OF THE DINING HALL.

	Operating Charges.	Income.
1917.		
Dec. 1. Balance, . . . . .	\$17,214 10	-
1918.		
Nov. 30. Total disbursements, . . . . .	39,829 59	-
Outstanding bills, . . . . .	1,683 85	-
Total collections, . . . . .	-	\$33,417 79
Accounts outstanding, . . . . .	-	13,317 61
Inventory, . . . . .	-	5,485 25
Balance, . . . . .	-	6,506 89
	\$58,727 54	\$58,727 54

ENDOWMENT FUND.<sup>1</sup>

	Principal.	Income.
United States grant (5 per cent.), . . . . .	\$219,000 00	\$7,300 00
Commonwealth grant (3½ per cent.), . . . . .	142,000 00	3,313 32
	-	\$10,613 32

<sup>1</sup> This fund is in the hands of the State Treasurer, and the Massachusetts Agricultural College received two-thirds of the income from the same.



## BURNHAM EMERGENCY FUND.

	Market Value Dec. 1, 1918.	Par Value.	Income.
Two bonds American Telephone and Telegraph Company 4s, at \$860, . . . . .	\$1,720 00	\$2,000 00	\$80 00
Two bonds Western Electric Company 5s, at \$980, . . . . .	1,960 00	2,000 00	100 00
One United States Liberty Bond 4s, at . . . . .	500 00	500 00	20 00
	\$4,180 00	\$4,500 00	\$200 00
Unexpended balance Dec. 1, 1917, . . . . .	—	—	680 55
	—	—	\$880 55
United States Liberty Bond investment, . . . . .	—	—	500 00
Cash on hand Nov. 30, 1918, . . . . .	—	—	\$380 55

## LIBRARY FUND.

Five bonds New York Central & Hudson River Railroad Company 4s, at \$800, . . . . .	\$4,000 00	\$5,000 00	\$200 00
Five bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$910, . . . . .	4,550 00	5,000 00	200 00
Two shares New York Central & Hudson River Railroad Company stock, at \$78, . . . . .	156 00	200 00	10 00
Amherst Savings Bank, deposit, . . . . .	167 77	167 77	7 50
	\$8,873 77	\$10,367 77	\$417 50
Nov. 22, 1918, transferred to college library account, . . . . .	—	—	417 50

## SPECIAL FUNDS.

*Endowed Labor Fund (the Gift of a Friend of the College).*

Two bonds American Telephone and Telegraph Company 4s, at \$860, . . . . .	\$1,720 00	\$2,000 00	\$80 00
Two bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$910, . . . . .	1,820 00	2,000 00	80 00
One bond New York Central Railroad debenture 4s, . . . . .	800 00	1,000 00	40 00
	\$4,340 00	\$5,000 00	\$200 00
Amherst Savings Bank, deposit, . . . . .	—	—	6 42
One bond Kansas City Street Railway 5½s, . . . . .	—	—	55 00
Transfer from Kansas City Railroad to Louisville Gas and Electric 7s, . . . . .	—	—	16 67
One bond Louisville Gas and Electric 7s, . . . . .	—	—	1,000 00
Unexpended balance Dec. 1, 1917, . . . . .	—	—	798 11
	—	\$5,000 00	\$2,076 20
Less amount of income for one bond Louisville Gas and Electric and one United States Liberty Bond, each \$1,000, . . . . .	—	—	2,000 00
Cash on hand Nov. 30, 1918, . . . . .	—	—	\$76 20

*Whiting Street Scholarship Fund.*

One bond New York Central debenture 4s, . . . . .	\$800 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit, . . . . .	271 64	271 64	12 18
	\$1,071 64	\$1,271 64	\$52 18
Unexpended balance Dec. 1, 1917, . . . . .	—	—	290 69
Cash on hand Nov. 30, 1918, . . . . .	—	—	\$342 87

SPECIAL FUNDS — *Continued.**Hills Fund.*

	Market Value Dec. 1, 1918.	Par Value.	Income.
One United States Liberty Bond 4s, at . . . . .	\$1,000 00	\$1,000 00	\$40 00
One bond American Telephone and Telegraph Company 4s, at . . . . .	860 00	1,000 00	40 00
One bond New York Central & Hudson River Railroad debenture 4s, at . . . . .	800 00	1,000 00	40 00
One bond New York Central Railroad debenture 4s, at . . . . .	800 00	1,000 00	40 00
Three bonds Pacific Telephone and Telegraph Company 5s, at \$960, . . . . .	2,880 00	3,000 00	150 00
One bond Western Electric Company 5s, at . . . . .	980 00	1,000 00	50 00
Boston & Albany Railroad stock, $3\frac{3}{8}$ shares at \$145, . . . . .	526 00	362 00	31 68
Amherst Savings Bank, deposit, . . . . .	72 75	72 75	3 24
Electric Securities Company bonds, $1\frac{1}{2}$ bonds at \$990, . . . . .	1,168 00	1,180 00	59 00
Two bonds Louisville Gas and Electric 7s, \$1,000, . . . . .	2,000 00	2,000 00	—
	\$11,086 75	\$11,614 75	\$453 92
Kansas City Street Railway $5\frac{1}{8}$ s, . . . . .	—	—	110 00
Transfer from Kansas City Railway to Louisville Gas and Electric 7s, . . . . .	—	—	33 33
Unexpended balance Dec. 1, 1917, . . . . .	—	—	891 15
	—	—	\$1,488 40
Less amount invested in United States Liberty Bond $4\frac{1}{8}$ s, . . . . .	—	—	1,000 00
	—	—	\$488 40
Disbursements for fiscal year ending Nov. 30, 1918, . . . . .	—	—	193 07
Cash on hand Nov. 30, 1918, . . . . .	—	—	\$295 33

*Mary Robinson Fund.*

Amherst Savings Bank, deposit, . . . . .	\$142 00	\$142 00	\$6 38
Boston & Albany Railroad stock, $\frac{3}{8}$ share, at . . . . .	54 00	38 00	3 32
Electric Securities Company bonds, $4\frac{1}{2}$ bonds, at . . . . .	812 00	820 00	41 00
	\$1,008 00	\$1,000 00	\$50 70
Unexpended balance Dec. 1, 1917, . . . . .	—	—	189 03
Cash on hand Nov. 30, 1918, . . . . .	—	—	\$239 73

*Grinnell Prize Fund.*

Ten shares New York Central & Hudson River Railroad stock, at \$78, . . . . .	\$780 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1917, . . . . .	—	—	245 74
	\$780 00	\$1,000 00	\$295 74
Disbursements for prizes, . . . . .	—	—	50 00
Cash on hand Nov. 30, 1918, . . . . .	—	—	\$245 74

*Gassett Scholarship Fund.*

One bond New York Central & Hudson River Railroad de- benture 4s, at . . . . .	\$800 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit, . . . . .	11 64	11 64	48
	\$811 64	\$1,011 64	\$40 48
Unexpended balance Dec. 1, 1917, . . . . .	—	—	223 23
Cash on hand Nov. 30, 1918, . . . . .	—	—	\$263 71

SPECIAL FUNDS — *Continued.*  
*Massachusetts Agricultural College (Investment).*

	Market Value Dec. 1, 1918.	Par Value.	Income.
One share New York Central & Hudson River Railroad stock at			
Unexpended balance Dec. 1, 1917, . . . . .	\$78 00	\$100 00	\$5 00 85 45
Cash on hand Nov. 30, 1918, . . . . .	—	—	\$90 45

*Danforth Keyes Bangs Fund.*

Two bonds Pacific Telephone and Telegraph Company 5s, at \$960,	\$1,920 00	\$2,000 00	\$100 00
Two bonds Union Electric Light and Power Company 5s, at \$930,	1,860 00	2,000 00	100 00
Two bonds American Telephone and Telegraph Company 4s, at \$860,	1,720 00	2,000 00	80 00 39 11
Interest from student loans, . . . . .	—	—	
	\$5,500 00	\$6,000 00	\$319 11 1,200 13
Unexpended balance Dec. 1, 1917, . . . . .	—	—	
	—	—	\$1,519 24 1,000 00
Investment United States Liberty Bond 4½s, . . . . .	—	—	
	—	—	\$519 24
Total loans made to students during fiscal year, \$425 00			
Cash received on account of student loans, . . . . . 929 00			
Excess of receipts over loans made, . . . . .	—	—	504 00
Cash on hand Nov. 30, 1918, . . . . .	—	—	\$1,023 24

*John C. Cutter Fund.*

One bond Pacific Telephone and Telegraph Company 5s, at	\$960 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1917, . . . . .	—	—	95 53
	\$960 00	\$1,000 00	\$145 53 19 40
Disbursements for fiscal year to date, . . . . .	—	—	
Cash on hand Nov. 30, 1918, . . . . .	—	—	\$126 13

*William R. Sessions Fund.*

One \$500 bond New York Central & Hudson River Railroad stock 6s, at \$1,010, . . . . .	\$505 00	\$500 00	\$30 00
Three United States Liberty Bonds, two at \$1,000 and one at \$500,	2,500 00	2,500 00	100 00
One bond Toledo Light and Power Company 7s, at . . . . .	1,000 00	1,000 00	35 00
One bond United Electric Light Company 6s, at . . . . .	1,000 00	1,000 00	30 00
	\$5,005 00	\$5,000 00	\$195 00 101 25
Amherst Savings Bank, deposit, . . . . .	—	—	275 71
Unexpended balance Dec. 1, 1917, . . . . .	—	—	
	—	—	\$571 96 193 85
Disbursements for fiscal year ending Nov. 30, 1918, . . . . .	—	—	
	—	—	\$378 11

SPECIAL FUNDS — *Concluded.**Alvord Dairy Scholarship Fund.*

	Market Value Dec. 1, 1918.	Par Value.	Income.
One United States Liberty Bond 4s, at	\$1,000 00	\$1,000 00	\$40 00
One bond Toledo Light and Power Company 7s, at	1,000 00	1,000 00	35 00
Two bonds United Electric Light Company 6s, at \$1,000,	2,000 00	2,000 00	60 00
	\$4,000 00	\$4,000 00	\$135 00
Amherst Savings Bank, deposit, . . . . .	—	—	90 00
	—	—	\$225 00
Overdraft Dec. 1, 1917, . . . . . \$260 00			
Less amount of receipts, . . . . . 225 00			
	\$35 00		
Extra expense in connection with investment, . . . . . 8 04			
	\$43 04		
Less discount on investment of bonds, . . . . . 28 34			
Overdraft Nov. 30, 1918, . . . . . \$14 70			

SUMMARY OF BALANCES ON HAND OF THE INCOME FROM FUNDS HELD IN  
TRUST BY THE MASSACHUSETTS AGRICULTURAL COLLEGE.

Burnham emergency fund, . . . . .	\$380 55
Endowed labor fund, . . . . .	76 20
Whiting Street scholarship fund, . . . . .	342 87
Hills fund, . . . . .	295 33
Mary Robinson fund, . . . . .	239 73
Grinnell prize fund, . . . . .	245 74
Gassett scholarship fund, . . . . .	263 71
Massachusetts Agricultural College investment fund, . . . . .	90 45
Danforth Keyes Bangs fund, . . . . .	1,023 24
John C. Cutter fund, . . . . .	126 13
William R. Sessions fund, . . . . .	378 11
	<b>\$3,462 06</b>
Alvord dairy scholarship fund overdraft, . . . . .	14 70
	<b>\$3,447 36</b>
W. D. Cows and J. H. Howard, land, . . . . .	733 33
	<b>\$2,714 03</b>

I hereby certify that I have this day examined the Massachusetts Agricultural College account, as reported by the treasurer, Fred C. Kenney, for the year ending Nov. 30, 1918. All bonds and investments are as represented in the treasurer's report. All disbursements are properly vouched for, and all cash balances are found to be correct.

CHARLES A. GLEASON,  
*Auditor.*

DEC. 18, 1918.



## HISTORY OF SPECIAL FUNDS.

## Burnham emergency fund:—

A bequest of \$5,000 from T. O. H. P. Burnham of Boston, made without any conditions. The trustees of the college directed that \$1,000 of this fund should be used in the purchase of the Newell land and Goessmann library.

The fund now shows an investment of . . . . \$4,000 00

## Library fund:—

The library of the college at the present time contains 58,563 volumes. The income from the fund raised by the alumni and others is devoted to its increase, and additions are made from time to time as the needs of the different departments require. Dec. 27, 1883, William Knowlton gave \$2,000; Jan. 1, 1894, Charles L. Flint gave \$1,000; in 1887 Elizur Smith of Lee, Mass., gave \$1,315. These were the largest bequests, and now amount to . . . .

10,000 00

## Endowed labor fund:—

Gift of a friend of the college in 1901, income of which is to be used for the assistance of needy and deserving students, . . . . .

5,000 00

## Whiting Street scholarship fund:—

Gift of Whiting Street of Northampton, for no special purpose, but to be invested and the income used. This fund is now used exclusively for scholarship, . . . . .

1,000 00

## Hills fund:—

Gift of Leonard M. and Henry F. Hills of Amherst, Mass., in 1867, to establish and maintain a botanic garden, . . . . .

10,000 00

## Mary Robinson fund:—

Gift of Miss Mary Robinson of Medfield, in 1874, for scholarship, . . . . .

1,000 00

## Grinnell prize fund:—

Gift of Hon. Wm. Claflin, to be known as the Grinnell agricultural prize, to be given to the two members of the graduating class who may pass the best oral and written examination in theory and practice of agriculture, given in honor of George B. Grinnell of New York, . . . . .

1,000 00

## Gassett scholarship fund:—

Gift of Henry Gassett of Boston, the income to be used for scholarship, . . . . .

1,000 00

## Massachusetts Agricultural College investment fund:—

Investment made by vote of trustees in 1893 to purchase one share of New York Central & Hudson River Railroad stock. The income from this fund has been allowed to accumulate, . . . . .

100 00

## Danforth Keyes Bangs fund:—

Gift of Louisa A. Baker of Amherst, Mass., April 14, 1909, the income thereof to be used annually in aiding poor, industrious and deserving students to obtain an education in said college, . . . . . \$6,000 00

## John C. Cutter fund:—

Gift of Dr. John C. Cutter of Worcester, Mass., an alumnus of the college, who died in August, 1909, to be invested by the trustees, and the income to be annually used for the purchase of books on hygiene, . . . . . 1,000 00

## Alvord dairy scholarship fund:—

Gift of Henry E. Alvord, who was the first instructor in military tactics, 1869-71, and a professor of agriculture, 1885-87, at this institution. The income of this fund is to be applied to the support of any worthy student of said college, graduate or postgraduate, who may be making a specialty of the study of dairy husbandry (broadly considered), with the intention of becoming an investigator, teacher or special practitioner in connection with the dairy industry, provided that no benefits arising from such fund shall at any time be applied to any person who then uses tobacco in any form, or fermented or spirituous beverages, or is known to have done so within one year next preceding, . . . . . 4,000 00

## William R. Sessions fund:—

In accordance with the request of my deceased wife, Clara Markham Sessions, made in her last will, I bequeath to the trustees of the Massachusetts Agricultural College, Amherst, Mass., the sum of \$5,000, it being the amount received by me from the estate of the said Clara Markham Sessions. The said \$5,000 to be kept by the said trustees a perpetual fund, the income from which shall be for the use of the Massachusetts Agricultural College; and according to the further request of my deceased wife, made in her last will, this is to be known as the William R. Sessions fund, and is to be a memorial of William R. Sessions; and it is my special request that the said trustees shall make record of the fact that this fund came from the estate of my deceased wife, Clara Markham Sessions, in accordance with her request made in her last will, . . . 5,000 00

---

\$49,100 00

FRED C. KENNEY,  
Treasurer.







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Sp. 2

PUBLIC DOCUMENT

No. 31

# MASSACHUSETTS AGRICULTURAL COLLEGE

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## REPORT OF THE PRESIDENT AND OTHER OFFICERS OF ADMINISTRATION



THE LIBRARY  
OF THE  
UNIVERSITY OF ILLINOIS

1920



# THE M. A. C. BULLETIN AMHERST, MASSACHUSETTS

---

VOLUME XIII FEBRUARY, 1921 NUMBER 2

---

PUBLISHED EIGHT TIMES A YEAR BY THE MASSACHUSETTS  
AGRICULTURAL COLLEGE: JAN., FEB., MARCH, MAY,  
JUNE, SEPT., OCT., NOV. ENTERED AT THE POST  
OFFICE, AMHERST, MASS., AS SECOND CLASS MATTER

## THE FIFTY-EIGHTH ANNUAL REPORT OF THE MASSACHUSETTS AGRICULTURAL COLLEGE

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PART I.—THE REPORT OF THE PRESIDENT  
AND OTHER OFFICERS OF ADMINISTRATION  
FOR THE FISCAL YEAR ENDED NOV. 30, 1920



PUBLICATION OF THIS DOCUMENT  
APPROVED BY THE  
SUPERVISOR OF ADMINISTRATION.



# The Commonwealth of Massachusetts

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DEPARTMENT OF EDUCATION, BOSTON, Feb. 15, 1921.

*To the Honorable Senate and House of Representatives.*

GENTLEMEN: — In accordance with the provisions of section 32 of chapter 30 of the General Laws, I transmit to you herewith, for the use of the General Court, the annual report of the Massachusetts Agricultural College for the year ending Nov. 30, 1920.

Respectfully yours,

PAYSON SMITH,  
*Commissioner of Education.*



# The Commonwealth of Massachusetts.

---

MASSACHUSETTS AGRICULTURAL COLLEGE,  
AMHERST, Nov. 30, 1920.

*To the Commissioner of Education.*

SIR:— On behalf of the trustees of the Massachusetts Agricultural College I have the honor to transmit herewith Part I of the fifty-eighth annual report of the trustees, for the fiscal year ended Nov. 30, 1920, this being the report of the president of the college and other officers of administration to the corporation.

Respectfully yours,

KENYON L. BUTTERFIELD,  
*President.*

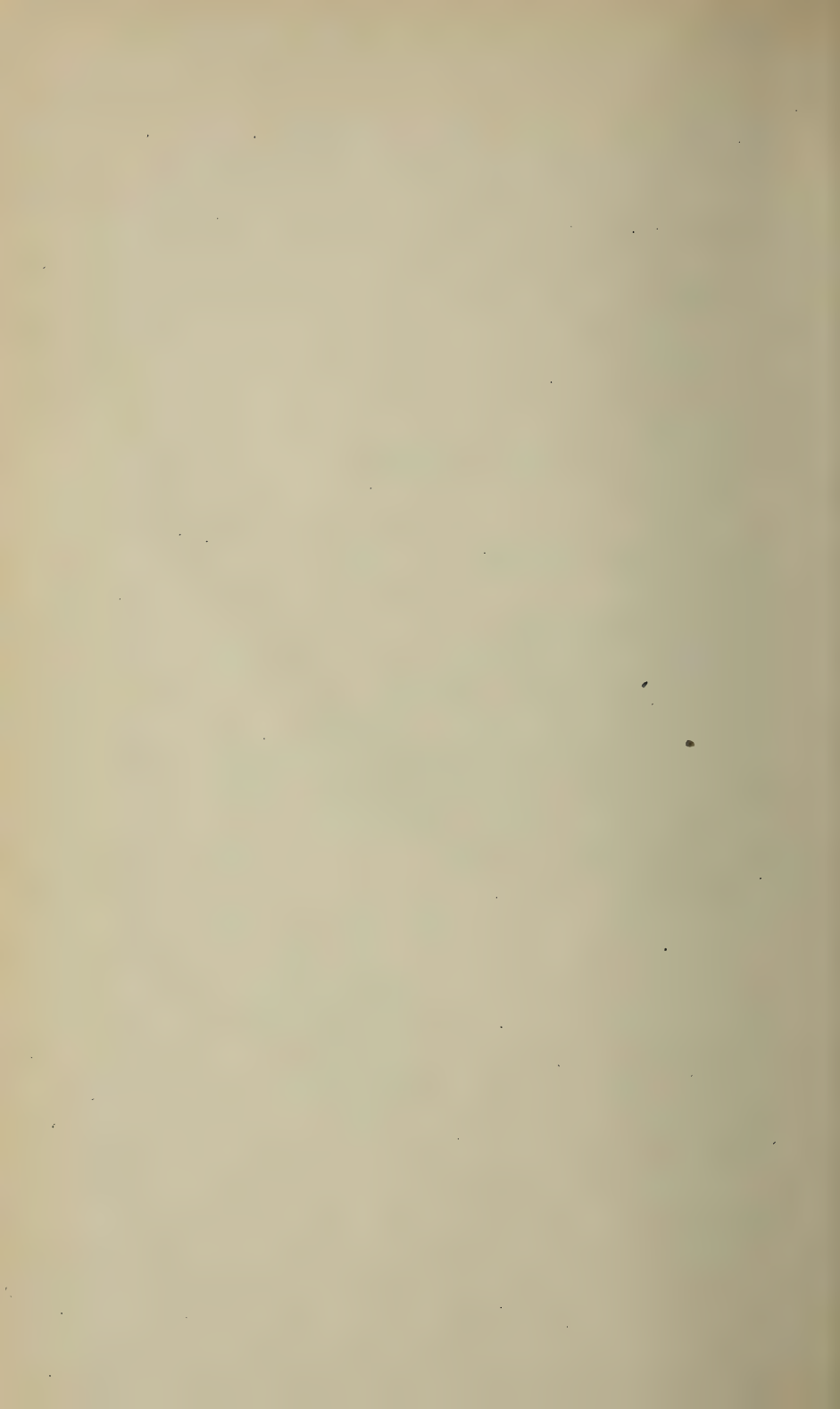




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## REPORT OF THE PRESIDENT OF THE COLLEGE.

---

*Gentlemen of the Corporation.*

I herewith submit my annual report as President of the Massachusetts Agricultural College for the year ending Nov. 30, 1920, and with it transmit reports from other administrative officers of the institution.

### REVIEW OF THE YEAR.

#### **The Problems of the Last College Year.**

The collegiate year ending last June proved to be probably the most difficult the College has had to pass through in a long while. The war completely upset student life and even made serious inroads in the established procedure of the College staff. The morale and traditions of student work and activities had to be reconstructed. Athletics and other student activities had been in abeyance nearly three years. Two-thirds of the senior class was composed of students whose college career had been interrupted one or two years. Military drill was not popular with the men who had served in the army. The established lines of campus leadership had been broken or had disappeared. An unexpectedly large number of two-year students were brought into a college which had been "geared" to four-year work. The presence of soldier students sent by the Federal Board for Vocational Education, most of whom could not enter four-year courses, added another complication to the campus problems. The increase in women students brought at once to the front relations between men and women in the various phases of student government and life.

However, by the end of the year most of these problems were satisfactorily adjusted, and the new college year began in September with a fine feeling of co-operation and enthusiasm. The College is now operating upon a basis as nearly normal as could be expected.

Great credit is due to the students themselves, who through their own initiative helped to bring order out of chaos and a new spirit of co-operation out of many discordant elements. The faculty, as usual, has responded to the emergency, although laboring under great personal as well as official discouragements.

#### **Change in Trustees.**

On Dec. 1, 1919, Dr. Arthur W. Gilbert succeeded Mr. Wilfrid Wheeler as Commissioner of the State Department of Agriculture, and consequently became a member of our Board of Trustees. Mr. Wheeler had been a member of the Board for nearly six years. Dr. Gilbert is a graduate of the College of the class of 1904, and brings to us the benefit of many years of successful experience in leadership in various agricultural activities.

#### **Resignations.**

Elsewhere in this report will appear a discussion of the number of resignations which have occurred during the year, and of the effect of these resignations upon the work of the College. Special mention should be made, however, of the resignations of at least three of our men.

Prof. John C. McNutt, who since January, 1916, had been head of our Department of Animal Husbandry, resigned during the summer in order to accept a position as eastern representative for the American Short-Horn Breeders' Association. Professor McNutt was a good teacher, popular not only with his students but also with the farmers of the State. He was particularly interested in stock judging, and developed among our students judging teams who always competed most creditably with similar teams from agricultural colleges all over the country. Professor McNutt did much to improve the live stock of the College, and secured by gift many valuable animals.

Prof. William D. Clark resigned as professor and head of the Department of Forestry, having served in this position since 1912. Since that time the Mount Toby demonstration forest was secured, and under Professsr Clark's direction the plans for forest management of that area were begun. During



the war Professor Clark served most acceptably as an assistant in the office of the Fuel Administrator for New England.

Prof. Robert W. Neal, who had been connected with the College since 1906, resigned in order to associate himself with the Home Correspondence School of Springfield. Professor Neal, during the early years of his service here, devoted his time to the teaching of English; later, as the field of agricultural journalism developed, Professor Neal was most active and successful in stimulating interest in this important study. Since the major in rural journalism was established he has had, each year, a group of men who became intensely interested in this work, and who, under Professor Neal's direction and inspiration, received excellent training. Professor Neal is the author of a number of important books.

#### **New Appointments as Department Heads.**

Attention should be called to the appointment of Mr. Sidney B. Haskell as director of the Experiment Station. Mr. Haskell is a graduate of the College of the class of 1904, and from the time of graduation until 1916 he was continuously associated with the College. The position in which he latest served us was that of professor of agronomy and head of the department. He was regarded by students and faculty alike as one of the most competent teachers of our staff, and was considered by the farmers of the State as one of our soundest and ablest authorities on questions of practical agriculture. From 1916 to 1920 Mr. Haskell was associated with the National Fertilizer Association, in which work he not only rendered service which brought the highest praise from his associates, but also made contacts throughout the country which greatly broadened his knowledge of agricultural affairs. Mr. Haskell in returning to the College has the full confidence and respect not only of his associates here, but also of the many alumni who are acquainted with him, and of the practical farmers of the State.

Mr. S. M. Salisbury was chosen to succeed Professor McNutt as head of the Department of Animal Husbandry. Mr. Salisbury graduated from the Ohio State University in 1913, and has had several years' successful experience in animal

husbandry. He was instructor at the North Carolina Agricultural College from 1913 to 1915; assistant professor at Ohio State University from 1915 to 1918; and served as county agent for Medina County, Ohio, from 1918 to 1920.

Mr. Laurence R. Grose was chosen as head of the Department of Forestry to succeed Prof. W. D. Clark. Professor Grose graduated from Brown University and Harvard Forestry School, and has had ample experience as a teacher and in practical work in forestry.

### Enrollment of Students.

*In the Regular Courses.* — This autumn the enrollment of students in work of collegiate grade is 506. The entering class numbers 135, as compared with 125 in 1919. The enrollment in the graduate school is 48, there are 23 special and unclassified students, and 435 in the four-year course. There are 27 women students enrolled in the four-year course, 7 in the graduate school, and 3 as special or unclassified students, making a total of 37 doing work of college grade as compared with 30 in this classification a year ago.

*In the Two-year Course.* — The work of the two-year course is now well established and the course is continuing to meet with enthusiastic approval among the people of the State. This fall is the first year which finds us with two full classes enrolled in this course. In the autumn of 1919, 191 students enrolled in the first year of the two-year course. This autumn 133 of these have returned for the second year's work; in addition, a number of those who entered a year ago have, during the year, transferred to other courses. One hundred and forty-two have this autumn enrolled in the first year of the two-year course; 19 are registered in the special vocational poultry course; and there are 50 in the unit courses, organized primarily for those soldiers and sailors who cannot meet the requirements of the regular two-year course. Of the 277 two-year students 22 are women.

*In the Summer School and Other Short Courses.* — The Summer School of 1920 brought to the College more students than any similar course in the history of the College. There were 186 enrolled in the regular four and six weeks' school,

and 136 others registered in other courses organized for the summer months. For the second year the courses of the Summer School were developed in co-operation with the State Department of Education, and served as a training school for teachers of western Massachusetts and for others desiring special training in agriculture.

There were 112 enrolled in the Winter School of 1920. The total number of students enrolled in the Short Courses during the year was, including 23 who graduated in 1920, 727. This total suggests the extent to which the College is, through its various short courses, reaching the people of the State who are interested in agriculture, and it should be noted that the majority of those enrolled in all courses, except the Summer School, are interested in agriculture because of their purpose to return to the farm.

*Disabled Soldiers as Students.* — During the year the College has continued to co-operate with the Federal Board for Vocational Education in the training of a large number of disabled soldiers and sailors desiring an education in agriculture. During the year approximately 300 men have been in the College under the provisions of this co-operative plan, some of these remaining a month or two, while others have enrolled in both the two-year and the four-year courses.

*Total Enrollment.* — The total enrollment at the present time is 845, of whom 506 are enrolled in the work of college grade and 339 in the various short courses.

### Commencement.

The annual commencement exercises were held Monday, June 21. Mr. Frank A. Vanderlip of New York gave the commencement address. The graduating class was the largest in the history of the College, this fact being due largely to the return a year ago of so many men whose college course had been interrupted for one or two years by the war. The degree of bachelor of science was conferred on 109 men and 3 women. The faculty decided to award the degree of bachelor of science, *honoris causa*, to those students who had completed three years' work at the College, and who had subsequently served at least one year in the army or navy. Under this ruling nine men received this honorary degree and diploma.



### **The Honor System.**

One of the most heartening steps taken by our student body in a long while was developed almost entirely through student initiative and leadership last spring in the inauguration of the so-called "honor system" of examinations, by which the instructor leaves the whole question of cheating in examinations to the students themselves. The rules require that each student shall sign a pledge that he has not asked or given help in the test or examination. Cases of broken pledges are handled by a committee of the students, who make their recommendations to the disciplinary officers of the College. The plan is backed by strong public sentiment among the students, and constitutes a real achievement of student leadership. It embodies the best traditions of the institution.

### **Professional Improvement.**

Careful study has been given during the year to a plan for a somewhat new departure with respect to terms of employment of members of the staff of the institution, the chief feature of which is an opportunity for short leaves of absence for professional improvement. Details are now before your committee on course of study and faculty, having been approved by the administrative officers of the College.

### **Alumni Memorial Building.**

By the middle of May, 1920, the full amount of \$150,000 necessary for the Alumni Memorial Building had been pledged. This amount was subscribed by 1,150 graduates and former students, and by 750 students and friends of the institution. There were no large individual gifts made, and the percentage of students and alumni contributing relatively small amounts was exceptionally gratifying. Too high praise cannot be given or too great significance attached to the early decision on the part of the alumni to undertake this splendid task, and to the rapidity with which it was completed.

Work on the Memorial Building was started March 30, 1920, and while the progress appears to have been slow, it is probable that the building will be closed in by the first of January,



and that it can be completed in time for the dedication at Commencement in 1921. The corner stone was laid at Commencement in 1920, when notable addresses were made by Mr. Atherton Clark of the class of '77, chairman of the building committee, Mr. William Wheeler of the class of '71, and Dr. Joel E. Goldthwait of the class of '85.

### **The Semi-Centennial.**

Plans are rapidly developing for the celebration of the semi-centennial in June, 1921. This will be the fiftieth anniversary of the graduation of the first class. It was decided last spring to carry on a series of events during the year preceding the celebration, largely in the form of conferences on subjects that are just beginning to become of importance, and yet which thus far have not had very much discussion, together with certain special student and alumni features that would have particular bearing upon the idea of the celebration. Rather informally we have been calling this year of special activities our "Year of Jubilee." It began with the laying of the corner stone of the Memorial Building at Commencement in 1920. It was followed in July by a conference of editors of agricultural college publications. In October, at the time of the dedication of the Women's Building, a conference was held on "The Relation of Women to Agriculture and Country Life." In the same month an especially notable conference was held at which the College was host to the American Civic Association, which devoted its entire program of three days to the subject of country planning. On our invitation the American Country Life Association held its annual conference in Springfield, Mass., with one day of its program given at the College; also on our invitation the Land Grant College Association held its annual convention in Springfield, and on the last day of its meeting the entire body of official delegates were guests of the College.

Other conferences have been planned for the rest of the year. Records of these are being kept, and it is hoped that eventually there may be a small volume giving at least a résumé of the main features of what I believe will be regarded some day as a distinct contribution to important developments in the field of agriculture and country life.

### **World Aggie Night.**

In connection with the raising of the alumni fund for the Memorial Building there was held on Oct. 25, 1919, a "World Aggie Night," when there were reunions of M. A. C. men in some 22 cities and towns of the country. The affair was so successful that it was thought advisable to continue the plan another year. The date chosen this autumn was October 29. Records indicate that some 600 M. A. C. men gathered in 40 cities and towns, in 19 States, and also in Cuba, and in the Hawaiian Islands. The College sent representatives to eleven of these meetings in order that the groups might be informed of the work of the institution. For those reunions where it was impracticable to send a representative, information concerning the campus activities was prepared and transmitted by mail. It is hoped that this annual reunion may become a permanent affair.

### **The Co-operation of Alumni.**

The alumni are rallying to the support of the College as never before in its history. The alumni reunion at Commencement last June was not only the largest, but it was by far the most enthusiastic and the best organized since I have been connected with the College. There have been many other evidences of alumni aid,—the magnificent gift of Memorial Hall, the large attendance and great enthusiasm at the World Aggie Night dinners in October, and, more than all, the increasing number of personal and group evidences of interest and pledges of support. We need the backing of the alumni not only in persuading the Legislature to grant adequate financial support, but their counsel with regard to questions of policy and organization must prove to be increasingly helpful.

### **Legislative Appropriations.**

Tables submitted show the main items for annual maintenance appearing in the College budget of a year ago, together with the amounts granted and the amounts used. It will be observed that the total amount granted was \$115,000 short of that asked, and the amount used was \$4,000 less than the

appropriation. The estimate for coal was overrun by \$20,000, and the coal on hand Nov. 30, 1920, was 1,000 tons less than that of the same date a year before. The only way by which we prevented a much larger overdraft on our maintenance appropriation was by urging every department to cut its maintenance expenses "to the bone." The work of a number of departments has been seriously handicapped on this account. The appropriations for maintenance have by no means kept pace with the increased cost of labor and supplies, so that the unit expenditure is less than it was several years ago.

In the matter of personal service it will be observed that there is a net surplus of \$9,275; in instruction, approximately \$10,000; and in the Extension Service, over \$5,600. The overdraft in general maintenance of \$2,500 was due to the demand for increased wages for laborers which could not have been foreseen.

The Legislature of 1920 was requested to provide funds for a number of pressing building needs at the College, including both a chemistry building and a library. Because of the many other demands made upon the State treasury, both for current expenses and for new construction, it was thought necessary to postpone appropriations for our larger needs. The appropriations granted were \$15,000 for the construction of a cavalry barn, and \$50,000 for improvements and equipment. (See Table V.)

#### ANALYSIS OF EXPENDITURES.

On the basis of the Treasurer's report, an analysis of the expenditures of the College from State funds for the year ending Nov. 30, 1920, has been made, and the following tabulation indicates the total expenses and the per cent of the whole for the various classifications:—

CLASSIFICATION.	Total Ex- pense.	Per Cent.
Administration, . . . . .	\$54,593 27	7.4
Instruction, . . . . .	184,051 01	24.9
Short Courses, . . . . .	35,257 21	4.7
Experiment Station, including M. G. F. S., . . . . .	68,321 57	9.2
Extension Service, . . . . .	84,788 46	11.5

CLASSIFICATION.	Total Ex- pense.	Per Cent.
Heat, light and power, . . . . .	\$96,773 28	13.0
Farm, . . . . .	61,369 34	8.3
Other producing departments, . . . . .	81,405 99	11.0
Repairs, . . . . .	16,898 28	2.5
Trustee, travel and printing, . . . . .	2,439 66	.3
Control laws, . . . . .	21,768 81	2.9
General maintenance expense, . . . . .	32,046 39	4.3
Totals, . . . . .	\$739,713 27	100.0

### Improvements and New Construction.

The women's dormitory was completed this autumn. You will recall that the total appropriation was \$127,400. This was not sufficient to complete the building and fully equip it. The New England Branch of the Women's Farm and Garden Association came to our assistance and generously gave \$2,000 for furniture and furnishings for the living room. The building promises to be satisfactory and convenient. Forty-three girls are now rooming there.

The cavalry barn was completed late in the autumn. It is placed on a site on the Plainville Road a convenient distance from Lincoln Avenue. It was constructed on specifications furnished by the War Department.

Delays in building both of these structures were very annoying, but seemed to be due to very great difficulties contractors have been having in obtaining labor and supplies.

No other substantial improvements were provided, although a large number of minor improvements have been made possible through the appropriations of the last Legislature.

### The Departments of Undergraduate Instruction.

The teaching work in the departments of undergraduate instruction has continued during the year along much the same lines as formerly. Consideration has been given by the various divisions to the revision of the course of study for the degree of bachelor of science, in order that the objectives of the work might be more clearly defined and the method of reaching those objectives improved. The requirements for admission to



the College have been slightly revised after consultation with representatives of the State Department of Education. The new requirements will be found stated in the current issue of the College catalogue.

More and more demand is being made upon the departments in the Divisions of Agriculture and Horticulture for instruction for the two-year course, and a number of instructors have been added to more adequately carry on this work.

Practically every department in the College has during the year sustained a loss of one or more members of its staff; in many cases the efficiency of the work has been greatly impaired by such changes, and in other cases we have been obliged to omit certain important courses. The damaging effect upon the various departments of these numerous changes in staff cannot be overestimated. If the situation continues, it will not only greatly reduce the effectiveness of our institution, but will virtually cripple our teaching organization.

Another need which has been most pressing for many years, and which is now emphasized by the larger number of students which we have, is the lack of adequate facilities in certain departments in the way of laboratories and classrooms. A library is more than ever a most urgent need, as is also a new chemistry building, gymnasium and armory, and a suitable building for the Departments of Horticultural Manufactures and Pomology. In these and in many other departments the instruction now given is performed under conditions which lessen its effectiveness and make impossible the best economy in operation.

### **Women's Work.**

The completion of the new dormitory for women students marks an epoch in the history of the College. It provides for 98 students, and will furnish an opportunity to develop social life among the girls which has been impossible heretofore. The women students take their meals at Draper Hall, which is located near the dormitory.

We are deeply indebted to the New England Branch of the Women's National Farm and Garden Association for their generous gift in the furnishings for the reception hall, living room and parlors in this dormitory. We are also indebted to

this association for scholarships offered to young women interested in the study of agriculture.

A large percentage of our women students avail themselves of the opportunity to elect courses in rural home life. The increasing interest in this work indicates that we must have larger facilities and ample teaching force for further development. We are in need of a practice house where home conditions and home problems may be duplicated as far as possible; also there is need of a gymnasium and some provision for outdoor athletics, such as a basketball court, tennis courts and hockey field.

#### **Work of the Agricultural Counselor for Women.**

We find that the number of agricultural positions which are open to women is considerably in excess of the number of women fitted to fill them. This and the good work already being done by those now in the field makes us feel that the College is affording women an opportunity to prepare themselves for important positions in agricultural work. Often women who come to the College have had little or no agricultural experience, and have no clear idea of the opportunities which agriculture offers them, or how to prepare for the work. For these women there is an opportunity to consult with an agricultural counselor for women, both in interviews and in classes.

#### **The Infirmary.**

The substantial increase in the number of men students is making constantly more pressing the long-standing problem of infirmary facilities. The presence on our campus of a number of women students brings an additional problem in this connection.

During the year it has been found necessary to employ two resident nurses instead of one, as was formerly the case. Because of the limitations of the present hospital buildings there is still no place where women students can be cared for, unless there are entire wards not utilized by men.

The construction of a first-class hospital with an adequate hospital force cannot long be delayed if we are to be equipped to adequately handle, not only a normal number of cases of

sickness occurring in a student body numbering 800 or 900, but also to meet the minimum requirements of the hospital in case of an epidemic. From the statistics furnished by the supervisor of the infirmary, it will be noted for the year just closing that 111 different students were treated at the infirmary as house patients, the aggregate number of days which they were confined being 653. In addition, 636 treatments were given to out-patients.

### **The Market-Garden Field Station.**

The year 1920 has been the most successful year in the history of the Market-Garden Field Station. Official projects have nearly all been carried through, exceptions being in connection with those to be directed by an entomologist. A man has not been available for this work. During the year there have been nearly a thousand visitors at the Market-Garden Field Station, including those who were present at the Field Day, August 4.

The work for the future is fairly definitely outlined, and may be summed up in the following projects: —

1. A study of the best methods of maintaining soil fertility, conducted under the name of the "Manure Economy Test."
2. The study of leading vegetable varieties as adapted to vegetable gardening in Massachusetts, with a comparison of the newer kinds.
3. A seed-production project, designed to determine the cost and value of home seed production, as compared with the use of seed purchased in the open market.
4. The study of green manure crops to determine their adaptability to vegetable gardening conditions.
5. Some special fertilizer studies peculiarly adapted to the vegetable gardening business, and which require demonstration where men can see them under closely controlled conditions.
6. The study of greenhouse lettuce production to determine —
  - (a) The possibility of improving quality through the discovery of a better variety than that now used.
  - (b) To experiment with growing conditions under glass to discover, if possible, some better combination than now in use to improve quality.

The greenhouse plant has been completed during 1920, with oil-burning installation. The administration building is sorely needed, and until it is available some types of the work must be more or less neglected.



Increased calls are being made on Professor Tompson for service throughout the State. The amount of correspondence is increasing. The demand at the Field Station is greater from season to season, and it is going to be necessary to have additional men engaged in vegetable gardening work. There has been splendid co-operation from growers throughout the State, and the interest in the work at the Market-Garden Field Station has easily doubled since the Field Day of August 4.

### **Library.**

During the year our inadequate library facilities have been somewhat amplified by the fitting up of the floor above the present library for reading room purposes.

Several thousand books have been transferred to the second floor, and a library assistant provided to care for the needs of students and faculty using this room. It should be emphasized that this adjustment is purely a makeshift, and that it relieves in a very minor degree the necessity for an adequate library building. The librarian reports that the more pressing needs for the library, in addition to a suitable building, are more books and other competent assistants to make available the library facilities.

The library now has 65,000 volumes, more than twice the number catalogued ten years ago.

There is a growing tendency on the part of the teachers and students alike to make use of the library as a common and necessary laboratory, and it is unfortunate that this tendency cannot be more adequately met.

### **Department of Physical Education.**

I wish this report to call especial attention to the organization, work and needs of the Department of Physical Education, for its purpose is far more than management of athletics, important as that is.

The head of the Department of Physical Education is supervisor of athletics. The assistant professor is coach of varsity athletics. There is an instructor in general charge of all two-year athletics, and another of all Freshman athletics. There is also supply man and clerk of the department.



Student voluntary participation in outdoor athletics has greatly increased, especially since supervision by department members has been provided for the major sports. Only one major branch of athletics is without full supervision. This is in track athletics, where the instructor is able to give only the time after 5 o'clock each day for this work. Track athletics should be one of the major sports of the institution, attracting a large number of men who are not active in other sports. Since it is our purpose to get as large a per cent of the student body to participate voluntarily, provision should be made for a man to devote at least his entire afternoon to this work. Hockey may be considered as a minor sport in the institution, but is very desirable, since it is one of the few outdoor sports of the winter season. The immediate coaching and directing of this sport has been in the hands of the senior students, since we have been unable, with the staff employed, to provide other direction and supervision.

It was thought, when Alumni Athletic Field was completed, that adequate space for outdoor athletics had been provided. However, the increase in participation which has taken place since its completion has been so great that during the fall and spring terms it is impossible to provide sufficient space for all the men who wish to participate. Tennis is a minor sport, but attracts a large number of men who are not attracted by other athletic sports. This institution should have at least twelve courts, whereas at the present time we have two very poor ones. Professor Hicks tells me that we should attempt immediately to extend our athletic field equipment to provide for at least twelve tennis courts and two additional football and baseball fields, the same grounds being used for both sports. If the hockey rink, which is at present under construction, works out satisfactorily, it will mean that the College pond can be left open for skating, and that the men who are participating in hockey will have a satisfactory equipment for their work.

This is probably the only educational institution of standing in the country which attempts to maintain a Department of Physical Education without providing a gymnasium wherein the department may follow up the development of men found

necessary after the physical examinations. We have maintained a Department of Physical Education for twelve years, and its real function has been the organization and supervision of outdoor games. In the beginning, with the number of students then in College, and with the existing condition of the drill hall, it was possible to carry on some gymnastic work. At present we have not even a satisfactory dressing room for those men who voluntarily take this work. The locker and shower rooms provided are actually unsanitary. To attempt to carry on the work of this department under present conditions is exasperating to all concerned. The greatest need is a new gymnasium building which may be utilized for both gymnasium and military work.

The development of coeducation in the institution has raised the problem of a place for recreation and gymnastic work for the women. For two years they were fairly well taken care of in a temporary gymnasium in the old chapel. However, this was taken away from them when the reading room was installed. Mrs. Hicks has been conducting required exercises for the women throughout each year, but at present the work has been reduced to the absolute minimum because there is no satisfactory place for carrying on the work. For outdoor work they have no field, and it is very discouraging to attempt to do anything for them with the facilities provided.

#### **Department of Military Science and Tactics.**

During the year the cavalry unit has replaced the infantry unit of the R. O. T. C. The Legislature of 1920 made an appropriation to provide a stable for the cavalry horses. In October an assignment of 36 horses and 2 mules, together with the necessary equipment, was made. In order to provide adequate care for the horses and instruction to the students the government detailed to the College a commissioned officer and 16 enlisted men. Maj. F. E. Snyder is now assisting Colonel Walker in the instruction work. It is apparent that the cavalry drill is more attractive to the students than the infantry drill, and it is expected that this new feature of military work will fully meet the expectations of Colonel Walker, who did much in obtaining the cavalry unit, and of the War Department.

**LEGISLATIVE BUDGET, 1921.****Current Maintenance.**

The request for current maintenance for the ensuing year totals \$995,000 gross appropriations from the State. This represents an increase of approximately \$260,000 over the appropriation granted in 1920. This increase includes the following items: to provide for salary increases, new positions and vacancies allowed during 1920, \$40,000; further salary increases proposed for 1921, \$20,000; to provide for new positions and vacancies in 1921, \$40,000; to meet the increased demands for skilled and unskilled labor, \$25,000; travel, office and other expenses, \$80,000; heat, light and power, \$30,000; repairs, \$18,000; control laws, \$7,000. A number of new positions are requested for instruction in the Short Courses, Extension Service and Experiment Station.

**For Permanent Improvement.**

*Chemistry Laboratory and Equipment, \$600,000.* — This is the second time that this structure has been asked for, and it has been under discussion for many years. The Commission on Investigation of Agricultural Education said: "An adequate chemistry laboratory is equally needed. The present chemistry building is one of the oldest, most dilapidated and most unsuitable buildings on the campus." Chemistry is a subject required of every student because it is fundamental in all agricultural work. For the same reason the research work in chemistry demands more space than does any other single branch of investigation. It is estimated that it will require an appropriation of \$600,000 to build and equip a building that will be at all adequate to meet the situation. However, not more than one-third of this amount will be needed during the present fiscal year.

*Improvements at Power Plant, \$76,000.* — The appropriation here requested is to provide for an ash storage bin and for two additional boilers and stokers for the power plant.

In order to meet the constantly increasing demand upon the steam boilers, to replace present boilers, some of which are eighteen years old, and to maintain a minimum reserve of



boiler capacity for use in case of emergency, our engineer considers it necessary to install two 406-horsepower boilers equipped with stokers. The cost of these items is estimated to be \$35,000. A stoker should be installed in connection with a 200-horsepower boiler already used. The necessary cost of setting these boilers, piping, flue work and other necessary repairs and improvements, incident to this installation, amounts to approximately \$69,000.

*Miscellaneous Improvements and Equipment, \$75,000.* — This item is composed of some 170 projects submitted by the various departments of the institution indicating department needs for improvements in buildings, for new equipment, for replacement of equipment and for the replacement of live stock. The aggregate cost of these projects would be \$133,000. Some of these projects have been deferred for many years, and all should, in justice to the institution, be provided for this year. We feel that \$75,000 is the minimum which should be expended this year for this purpose, and a reduction from the total requests by the departments has been authorized by the trustees, only in consideration of the various demands made upon the State treasury by this and other departments of the Commonwealth.

*Addition to Rural Engineering Building, \$30,000.* — An extension to the rural engineering shops is made necessary by the increased enrollment of students desiring instruction in this department. An especially large number of the two-year students are choosing this work, and the present facilities are inadequate. As was expected when the department was organized, it has developed into one of the most useful and popular of the practical departments, and there is really no limit to the service that it can render to the students and the farmers of the State. Farm machinery is becoming more and more an important factor in agriculture. Simply to meet the existing demand requires that the present space be doubled.

*Purchase of Brooks Farm, \$21,400.* — The erection of certain buildings on the campus during the past twenty years has made a serious encroachment on the field plots used by the Experiment Station. Immediately adjoining the College estate on the north is a farm, the soil of which is a continua-



tion of that now used for Experiment Station purposes. The area comprises 60 acres, and farm buildings. In a recent appraisal by three competent judges \$21,400 was agreed upon as a fair price for this property. This land is now very urgently needed for the purpose indicated, and, looking into the future, it seems absolutely essential that it be available for experimental purposes.

*Tennis Courts and Gymnasium for Women Students, \$13,500.* — The gymnasium work for women students has been carried on for three years, and the number of women has been constantly increasing. We have been using the old chapel which has been a very satisfactory floor, but as this has now been assigned for the use of the library, it will be no longer available for the girls. The tennis courts should be permanent, and the building a wooden structure with board floor 40 by 60 feet, and 20 feet clearance ceiling, the building to be heated by furnace.

*Market-Garden Field Station, \$10,000.* — In 1919 the State Legislature, through special appropriation, provided \$7,500 for the construction of this building. The work has not been undertaken because it was evidently impossible to complete the project with the funds available when it was possible to start the work. Two revisions of plans were made to assist in reducing building costs, but cost of labor and of materials so increased that it seemed unwise to proceed. Consultation with market gardeners of the advisory board, the architect and builder all resulted in advice to wait until adequate provisions could be obtained for the building.

*Equipment for Tillson Farm, \$10,000.* — For a number of years the institution has been developing important research work in connection with poultry husbandry, and it is apparent that valuable results may be obtained by the continuation and expansion of these projects. It is desirable that this experimental work be done at an isolated place. The College owns a farm of about 70 acres located some distance from the main area, and it is proposed to develop this farm as an experimental poultry plant. It will be necessary to build laying houses, a breeding house, an incubator cellar, a feed room and a barn. Considerable fencing must also be done.

The total cost will be slightly in excess of \$10,000, but it is thought that this amount will be adequate for the initial work.

*Poultry Breeder and Judging Laboratory, \$8,000.* — During the past two years our poultry plant has been inadequate to meet the needs of the number of students enrolled in the various courses. It is scarcely large enough to take care of our juniors, seniors and Short Course students, while the freshman class, one-year vocational course and two-year course have more than tripled the requirements for laboratory facilities. This laboratory building will house 24 small pens and furnish a large laboratory 20 by 30 for general demonstrations, and a large long laboratory on the second floor to be used particularly for judging and culling.

*House for Farm Superintendent, \$8,000.* — In order to make the most economical arrangement relative to the employment of farm help it is necessary to insure at least reasonable living conditions for them. If the present house occupied by the farm superintendent could be converted into a boarding house for the farm help it would go far in solving the present difficult situation; \$8,000 is requested to provide a cottage which the farm superintendent would then occupy.

*Macadam Road, \$8,000.* — There is no first-class macadam road anywhere on the campus. There are two main approaches to the campus which have heavy traffic by sightseers as well as others. The total length of the main drives on the west campus is approximately one mile. All the coal used by the institution is brought in from the railroad stations, chiefly by automobile truck. That portion of the road which is used for this purpose should be macadamized at once. The distance is approximately 1,750 feet, and the estimated cost is \$8,000.

### THE COLLEGE AT THE CROSS ROADS.

An institution rarely follows a direct road to its objectives. It has its roadside delays, its bypaths, its hills of difficulty. Our College is no exception. In the long look backward we see great progress, but we discover also times of serious discouragement, even hours of crisis. There have been days of criticism, periods of starvation, moments when the very existence of the College was threatened. The College more than once in its history has found itself at the cross roads.

There is no doubt in the minds of those immediately responsible for the administration of the College that it faces another of these crises, perhaps the most significant in several decades. This conviction of a serious situation reveals itself chiefly in a deep feeling of uncertainty — a doubt not so much as to the course the College *should* take, but a real anxiety as to the course it is to be *permitted* to take, and the speed and effectiveness with which it may proceed. I freely grant the fact that uncertainty and anxiety characterize our time. Labor, industry, transportation, commerce, merchandizing, agriculture, religion are nearly rudderless as a result of the great world storm. Doubtless we are facing in America a period of rebuilding in education as in other human interests. The colleges share these large general problems of reconstruction. But the present crisis at the Massachusetts Agricultural College is not wholly a result of the war. It consists in certain pressing questions about policy, program and support that have been gathering force for some time, and now demand answers. The remainder of this report is an attempt to analyze a situation that should not be trifled with.

#### The Necessity of Increased Salaries.

In my report of a year ago I indicated the outstanding importance of substantial increases in salaries for practically the entire staff. The increases secured by no means met the needs. The failure to pay our employees adequately is still a major problem.

A year ago I reported 39 changes in the staff. The past year there have been 58 changes, — 30 in the professional staff and 28 in the clerical staff. In three important departments the personnel has almost completely changed within the past year. Nearly 100 changes in a staff of approximately



200 persons have occurred in two years. Less than one-third of the Extension staff employed two years ago are now with us. In these two years there have been 43 resignations in the clerical staff which ranges in number from 50 to 60.

I do not wish to be misunderstood with reference to the reasons for nor the significance of these changes in staff. The turnover in all business has recently been unusual. Moreover, commercial business has increasingly been made attractive to men with an agricultural training, as it has been to many other groups of college men. No college can retain all the men it would like to keep. With due allowance for these factors, the situation still remains acute. It takes considerable time for the new employee to begin to do his best work, in the Extension Service particularly. It is estimated that it takes new clerks at least four months to become really effective. Nor will it do to imply that these changes in the clerical staff are of minor consequence — quite the opposite is true. A very small proportion of our clerical service is of a strictly business character; it is almost wholly professional. It needs clerks of good education and of high intelligence. They cannot easily be transferred from one department to another. Each department has its own vocabulary; its own technical procedure. In the majority of the clerical positions the clerk is required to be in some real sense a specialist, so that when a well-trained clerk of this type leaves, the professor for whom she has been working is handicapped in both time and in energy. His main work is seriously interfered with.

Our budget last year called for an increase in salaries for the positions held by the professional staff averaging about 16 per cent. The Legislature granted a sufficient item in the appropriation bill to cover this amount, but the allowances made by the Supervisor gave us an average of only about 12 per cent. These increases at first blush may seem to be reasonably satisfactory. Of the increases recommended by the trustees, those for about one-half the staff were allowed or minor reductions made in them. However, the increases for nearly one-half the staff were materially reduced, individual cuts ranging from \$120 to \$300, and in some cases considerably more than this. The average cut in the salaries the trustees asked for this group was 34 per cent.



*Salaries of Administrative and Professional Staff.*

RANK.	Number.	Average Salary, 1914.	Average Salary, 1920.	Per Cent Increase granted, 1920.	Per Cent Increase over 1914.	Proposed Average Salary, 1921. <sup>1</sup>	Normal Average, 1921. <sup>1</sup>	Per Cent Increase requested, 1921.	Per Cent Increase, 1921 over 1914.
Dean and directors, . . . . .	5	\$3,833	\$4,580	7.2	19	\$4,936	\$5,750	7.7	29
Professors: —									
Heads of departments, including heads of divisions, .	24	2,625	3,440	14.4	31	3,704	4,200	9.4	43
Not heads of departments, . . . . .	25	2,175	3,003	12.0	38	3,251	3,500	8.2	49
Assistant professors, . . . . .	32	1,734	2,358	16.0	36	2,660	2,750	12.8	53
Instructors, . . . . .	28	1,137	1,696	12.9	49	1,861	—	9.8	64
Total, . . . . .	114	—	—	—	38	—	—	—	52
President and others on administrative and professional staff.	19	—	\$2,997	8.9	—	\$3,249	—	8.4	—
Total staff, . . . . .	133	—	\$2,710	12.5	—	\$2,972	—	9.7	—

<sup>1</sup> Salary considered fairly adequate under present conditions.

I am presenting tables which show that the average salaries now being paid in all grades of the professional staff are only 38 per cent greater than were paid in these same grades in 1914, and that, if our estimates for 1921 salaries should be granted, the total percentage of increases in seven years will be only 52 per cent. This is scarcely more than one-half of the increase in the cost of living for the period, for, according to figures prepared by the Commission on Necessaries of Life, the increase in living costs amounts to approximately 100 per cent. We must remember, further, that in a college in which a majority of its staff are relatively young men, an average increase of 5 per cent a year for the entire staff is not excessive, merely in recognition of increased value of service and quite apart from any increase in cost of living. But it will be seen that our staff have suffered a *serious progressive reduction of actual salary income for the past seven years.*

Meantime, the other leading agricultural colleges of the country have met the situation. I submit a table which shows that while average increases in salaries in several agricultural colleges of the country were over 30 per cent from 1918 to 1920, our own were only 15 per cent. These same colleges, with one exception, are proposing further increases, varying all the way from 6 to 35 per cent for next year, while we are proposing an increase of 10 per cent.

*Salary Increases in Various Institutions.*

	Per Cent Increase made, 1918-20.	Per Cent Increase proposed, 1921.	Per Cent Total, 1918-21.
Kansas State Agricultural College, . . .	27	30	65
Michigan Agricultural College, . . .	60-100	None.	60-100
Iowa State College, . . .	20	35	62
University of Wisconsin College of Agriculture, . . .	52	6	60
Ohio State University College of Agriculture, . . .	58 per cent in average salary in various grades.	No further increase in standard salaries.	58
University of Missouri College of Agriculture, . . .	20	38 per cent in maximum salary in various grades.	-
Cornell, College of Agriculture, . . .	17-44	11-29	-
University of Illinois College of Agriculture, . . .	33 per cent for lower paid groups.	33 per cent for those not previously increased.	-
Pennsylvania State College, . . .	30	10	43
New Hampshire State College, . . .	20	10	32
Connecticut Agricultural College, . . .	25	Substantial.	-
Massachusetts Agricultural College, . . .	15	10	26

We have also made an inquiry as to how this institution ranks in the matter of payment to heads of several typical college departments, and we observe not only that we are near or at the bottom of the list in every case, but that the amount of salary in these other institutions in some cases is far higher than ours. In Ohio, for example, the present salaries for department heads range from \$3,500 to \$6,000. Or, again, in the Michigan Agricultural College the minimum salary for heads of departments is \$4,500. We have twenty-seven heads. Three of these serve also as deans or directors, and receive salaries ranging from \$3,900 to \$4,800; three others are heads of divisions as well as heads of departments, and are receiving salaries of \$4,000 or \$4,200. Of the twenty-one heads of departments who have no unusual administrative responsibility two are paid \$3,900, and the other nineteen receive salaries ranging from \$2,340 to \$3,720.

Nor is it unfair to compare our salaries with those in some of the liberal arts colleges and endowed universities. In Amherst College the minimum salary for the full professor is \$4,500, at least 50 per cent more than our own minimum. Another element in this comparison is the fact that in most colleges members of the teaching faculty have three months in the summer for vacation, for professional improvement, or for further earnings. At present probably more than three-fourths of the members of our professional staff work eleven months in the year.

I reported a year ago that the salaries of our staff had been standardized, with minimum and maximum salaries and definite increments of increase for each grade. It was our supposition that this scheme of grades would be largely automatic. Unfortunately this plan seems not to have been followed in actual operation. It is exceedingly important that members of the staff know about what to expect in the way of increments of salary increases from year to year, so long as their service is satisfactory. In fact, an element in this whole salary situation quite as serious as the failure to actually increase salaries is the uncertainty as to the future.

We can fairly argue for increase of salaries to members of our staff purely on the basis of justice to them. But as a

practical business proposition, also, we should make increases. The institutions which have made the most liberal advances in salaries are our active competitors for the type of men that we have on our faculty. There is a scarcity of well-trained men for these positions. Some of us believe that the difficulty of the agricultural problems in New England makes it all the more necessary to have the very best men obtainable to serve as experts in the various departments of the institution. We cannot get them and keep them for any length of time unless we are willing to pay reasonable salaries. Do I need to reiterate that a college consists in its men? Governor Coolidge recently made the statement in public that "it is useless to send boys to college to be educated by an underpaid faculty." Is Massachusetts willing to follow a practice which inevitably will lower the quality of our personnel? Does Massachusetts wish deliberately to plan for a second-grade or a third-grade college in this great sisterhood of land-grant institutions? That issue is with us now.

### **Administrative Control.**

By virtue of chapter 262 of the General Acts of 1918, the College became a State institution in a technical sense, and thus apparently subject to all laws and administrative rules governing the entire group of State departments and institutions. These requirements have been made known to us through a long series of rulings, oral and written, coming from time to time from the State Auditor, the Supervisor of Administration, or the Commissioner of Education.

Some of these rules relate only to details and do not affect the College seriously. Some of them require practice that we think less effective than our former methods. Some of them are in our judgment decidedly detrimental to the best work of the institution. In fact, the whole procedure is becoming increasingly burdensome and unsatisfactory. Let me indicate a few of the main difficulties.

On account of the new regulations the work in the treasurer's office has vastly increased; additional clerks have been taken on wholly on that account. Owing to the necessity of sending all bills to the State House, both payments and statements of



accounts are delayed. The monthly statements, formerly in the hands of the administrative officers the middle of the month, now come out two months later, and are practically valueless for current business purposes. I am, indeed, prepared to recommend that some steps be taken to develop an entirely new method of accounting for the benefit of administrative officers, either by allowing them to keep their own accounts, or by a system of budget accounting. The details that must be followed in making purchases cause delay, and it is very doubtful whether better prices are obtained than we could ourselves secure. The requirement that all our printing shall be done by the State printers, as accommodating as those printers are, leaves much to be desired in the way of promptness in publishing material that is of value only as it has quick circulation.

The requirement that all income earned by the institution shall go into the State treasury, instead of as formerly constituting a circulating fund, tends to lower the business efficiency of our producing departments. The fact that we are theoretically supposed to get credit for this income does not dispose of the question at all.

In any college it is necessary to seek men for new positions during the winter or early spring. This past year we were unable to make offers to candidates for new positions or for vacancies until the college year was practically over, and in the case of graduate assistants not until midsummer. In our Extension work particularly we find need to make quick decisions with reference to personnel, but we cannot act on our own decision. We cannot take on any employee, permanent or temporary, nor increase a salary, nor change a grade without permission. Our judgment as to the adjustment of salaries as between different persons may or may not be followed. We cannot even determine our own educational policy; if a choice is necessary between two new positions desired, our opinion concerning the greater need is not final.

Chapter 350 of the General Acts of 1919 states that: "The trustees of the Massachusetts Agricultural College, existing under authority of chapter two hundred and sixty-two of the General Acts of nineteen hundred and eighteen, are hereby

placed in and shall hereafter serve in the said department" (Department of Education).

Thus the responsibility for the control of the institution has passed out of the hands of the trustees and the administrative officers chosen by them. The College has come under a government by laws and administrative rulings devised for ordinary administrative departments of government or for institutions of a charitable or penal character — laws and rulings never intended for an educational institution, and certainly not adapted to a college such as this.

Moreover, the question is never asked us, will this new rule make the institution more or less efficient? We are simply required to conform. Standardization of personnel, centralized administrative control, the routine methods of a highly organized bureau are substituted for the judgment of those closest to the work, their full responsibility for results, their specialized experience, and their pride in achievement.

I recognize that we at the College may be prejudiced because some of our old freedom of initiative has been taken away. I have endeavored to discount this. I also want to make it clear that we are not complaining of the attitude or activities of State officials. There is every reason to think that they are simply carrying out the law as they understand it. But I cannot state too strongly a growing conviction that the system as applied to our College is wasteful, unscientific and unworkable.

We do not ask to be released from close financial oversight. We do not wish to be outside of the budget system. We have no desire to break away from the general educational system of the State. We ask that Massachusetts recognize, as other States have recognized, that there is a difference between the College and other State institutions, both with respect to the financial and the administrative control. We ask, also, if it is not possible for this State to give back to the trustees the management of the institution, while at the same time providing all necessary checks upon our activities and methods? Responsibility and initiative on the part of the trustees and other employed officials are absolutely essential to the effective management of the institution.

### **The Scope of the College.**

In my report for the year 1911 I emphasized the proposition that this is an agricultural college and nothing but an agricultural college. The policy of the College for all these years has been in harmony with that declaration. We have stood steadfast against any departure from this fundamental basis of our work. During the past fifteen years the proportion of our graduates going into agricultural pursuits has shown a decided increase over former years.

We have, however, been obliged constantly to broaden our definition of agriculture and to widen the scope of our activities. In my report of 1918 I called attention to the fact that the developments of the war had demonstrated that we must deal with the whole question of the food supply of the people of the State; that it was not enough in our investigations and our teaching and our Extension Service to consider only the production of farm crops and animals; but that we must prepare to deal with questions of food distribution, of food conservation, and even of food use in the home. In this connection may I call attention to the fact that, particularly in our Extension Service, the Federal government is committed to the idea that the land grant college shall develop work in home economics. Yet thus far we have been unable to secure an allotment out of our State appropriation sufficient to give the same support to our county home demonstration work that we are able to give in the case of farm work.

Thus, while the interests and needs of Massachusetts farmers are our first concern, it is also our obligation to place ourselves at the disposal of the entire population of the State, in city and in country, with respect to all these problems of food supply. I am sure I do not need to indicate the obvious significance of this newer definition of our work. It opens up an unworked range of possibilities, and requires us to render an account of our stewardship to all groups of our people alike, — to farmers, to workingmen, to business men, to the entire population of the Commonwealth.



### **The Administrative Policy and Organization.**

Some years ago I presented a somewhat detailed outline of various aspects of policy and organization that I thought should be developed, or at least should be studied. Through the years some progress has been made. It is slow work at best, and the war practically put a stop to any serious study of these questions. We have, however, outlined a plan for securing the co-operation of several groups of persons interested in the College, including faculty, students and alumni, as well as representatives of agencies not immediately connected with the College, in an effort to see if at the forthcoming semi-centennial there may not be presented a clear outline of our problems and how they may be met. I have invited a representative of the United States Bureau of Education, who has consented to work with the Land Grant College Association in these matters, to make a personal study of our administrative organization, and to report his findings and suggestions. We already have on file a report from a first-class efficiency engineer, made after a pretty careful study of the form and method of our business organization. Perhaps the most difficult, and without doubt the most important, of these problems has to do with the course of study; not merely because the course of study must reflect the scope and policy of the institution, but because courses offered, methods of instruction, relationships between vocational, citizenship and cultural aspects of education are all of the utmost consequence in the training of future leaders.

### **The Permanent Building Program.**

For many years I have annually been obliged to stress the fact that we were far behind in our building program. To-day the situation has become not only extremely discouraging but almost disheartening. No major building has been provided in seven years. Departments inadequately housed a dozen years ago are still obliged to put up with the same facilities they had then. New departments have no abiding place. The increased costs of building have only added to our difficulties. You will recall that I laid this whole situation before you last autumn, and, acting under your direction at that time, I have



prepared a building program which I believed to be a minimum program for the next ten years. The architect will submit provisional plans for all of these buildings with estimates of cost.

In this connection I mention again the need of a *permanent* building program and financial support for it. Here, too, the element of uncertainty is a prime difficulty. A regular annual apportionment item in the budget, either a fixed sum or a sum the amount of which is designated by a so-called mill tax, or some other method of permanent and regular adequate appropriations for buildings and other permanent needs is another of the crucial needs of the institution.

### **Public Understanding and Support.**

The extent of the service of a State-supported institution is governed very largely by the extent to which the people of the State know the facilities it offers for the education of their children and the solution of their problems. I am amazed from time to time to discover evidences of the slight degree to which the people of the Commonwealth know the College and its work, to say nothing of its possibilities of usefulness to them. It is perhaps not surprising that a Legislature should question a budget so large as ours, unless the people recognize the work the College is doing and capable of doing. I have repeatedly urged larger appropriations for a sane, fair, but aggressive plan of publicity for the work of the College. I am now convinced that this is one of our great needs. Let me make it clear that it is not a matter of advertising for more students, much less a matter of self-praise. It is simply the necessity of laying before our constituents, that is, the people of the entire State, information as to how we are trying to serve them, and of seeking from them counsel as to how we can serve them better. You will remember that last autumn you authorized me to present to you a plan by which the purpose, work and needs of the institution could be more fully laid before the people of the Commonwealth. I have prepared an outline of such a plan.

## WILL THE STATE SUPPORT THE COLLEGE?

For thirty years after the College received students it had extremely meager financial support, even for those days. The average annual income from the State for current maintenance from 1867 to 1896 was \$13,333, and the average annual appropriation for land, buildings and other equipment for the same period was \$12,990. By the close of the century the tide turned. In 1898 the Legislature appropriated \$28,000 for the erection of a veterinary laboratory, *the first teaching building of permanent construction erected on the campus*, and since that time substantial modern buildings have from time to time been added. Beginning a few years later, the annual appropriations for current maintenance were progressively increased. The physical "plant" of the institution is now inventoried at nearly \$2,000,000. For the fiscal year just closed the total net cost of the College to the State for current maintenance was about \$600,000. Our responsibility for the wise use of these large grants is very real; our staff as well as your Board of Trustees are fully conscious of this trust.

However, we must ask the people of the Commonwealth not to blind their eyes to the rapid and wide expansion of effort and the vastly broadened scope of service which has resulted from the use of these large sums. Nor should the State fail to sense the new opportunities which the College continually faces. The main question to be now put, is not the expense of the College to the State, but how far is the State warranted in making appropriations sufficient to permit the College to cultivate these wide untilled fields of opportunity. Theoretically there is scarcely a limit to the service the College can render. Practically, the Commonwealth will set bounds; the College cannot expect to secure all the funds it could wisely use. The real question, therefore, I repeat, is how far the State is willing to go, — how much faith does it have in the results of the investments in the College? We ought to know what support to expect.

I wish it were possible for the Legislature to realize that we are not pressing for added salaries, or for increased mainte-

nance, or for new buildings with any other reason than that in our judgment these appropriations are absolutely essential in order that the College shall render its full service to the sons and daughters of Massachusetts, and, indeed, to the entire population of the Commonwealth. Furthermore, can we not all agree that the institution, if it does its work well, is an investment, an asset not a liability; that it really results in adding to the wealth of the State and not subtracting from it? Is our College to be regarded as a necessary nuisance, or as an object of the most liberal possible support because it is considered indispensable to the economic and social progress of the State?

Can I possibly be more clear or emphatic in stating that this institution is not *our* institution? It does not belong to the trustees nor to the faculty; it belongs to the people of the State. We are their trustees for its effectiveness. We simply report the conditions under which it can be made fully effective. We would be derelict in our duty if we failed to indicate the terms, either financial or administrative, under which we believe it can be made most effective.

### **In Conclusion.**

The College is at the cross roads. These various problems of salaries, of administrative control, of the scope of the institution, of its organization and methods of work, of supplying it with adequate physical equipment, of getting into touch with the people to whom we are responsible, — all of these are elements in a real crisis. I am aware that any institution constantly faces new problems, and that it takes time as well as patience and thought to bring such issues to a satisfactory conclusion. But these questions that I have raised are things that cannot wait for answer if the College is to be fully effective. We are losing ground, gentlemen. We cannot maintain the old *esprit de corps*, the vigorous and aggressive spirit that I think it fairly may be said has characterized our methods and our outlook, if the present uncertainty continues long. I plead, then, for such action on your part and on the part

of the Legislature and the State officials as shall enable us, if not to achieve all the ends that we would like to accomplish in the immediate future, at least to have a fuller knowledge of what is to be expected of us and of the extent to which we are to be supported in such service as we are called upon to do.

KENYON L. BUTTERFIELD,

*President.*



## REPORTS OF OTHER ADMINISTRATIVE OFFICERS.

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### **Report of the Dean.**

During the year 1919-20 the dean's office was able to try the system of faculty-scholarship advisors with the freshman class in a more intensive way than ever before. This was due to the comparatively small freshman class, which relieved some of our freshman instructors from the usual heavy burden of classroom work. In previous reports I have mentioned the great need of helping the new men to make the transition from high school to college, and the need of a corps of kindly teachers to handle this problem. Professors Machmer and Parker gave a total of time greater than was ever given before by appointed advisors, and I am glad to say their efforts proved most effective. We had a fewer number of men dropped from College and fewer "low" and "below" students on the midterm reports than in any year since I have been in charge of the records. This record confirms my belief in the advisability of giving close personal attention to the first-year student during the first months of his residence.

In the future I trust we may be able to increase this supervision. I refer, of course, only to the important months of the first terms. It should not continue, except in a few individual cases, beyond the second term of the freshman year. In order to do this, however, we must either engage one or two special men to give all their time to it, or else employ additional instructors to help relieve the heavy burden of our present staff of freshman teachers.

This report is written at the end of six weeks of the fall term 1920-21, during which time we have not been able to give the freshman the attention we gave him last year. The result, I am sorry to say, is a rather low average of scholarship, and the midterm report is most unsatisfactory. Of course, other factors, like fraternity rushing and other social dis-

tractions, have contributed to this unfortunate result. I am quite sure, however, that if our instructors had been able to give as much time and attention as was given last year the story would be quite different.

The question of thorough and continuous work is ever with us, and I do not suppose we can ever hope to solve it entirely. The despair of all teachers is the happy willingness of the pupil to do just a passing grade of work; in view of it the teacher is bound to demand a high grade of work in his own classroom, and to inspire the student by precept and example to do his best at all times. Most of our instructors do make such demands, especially in the first two years. On the other hand, we have our easier courses, and a student often chooses a large program which fails to challenge not only his best effort but any real hard effort at all. The remedy, of course, is mainly in the hands of those who have charge of formulating and welding together the courses of the curriculum.

I have intimated above the deleterious effect upon scholarship of such matters as "fraternity rushing." I feel called upon to say very positively that our system this year (allowing "rushing" to continue for the first two weeks of college) was most disastrous to the scholarship of the two lower classes. The same conditions should not be tolerated a moment another year. Members of each class have freely made personal confession that it was demoralizing and disruptive to a degree they had never experienced before. Since many students and alumni are agreed that a different scheme of fraternity pledging should be substituted, we may hope this year's experience will not have to be repeated.

Last year Professors Machmer and Parker tried to keep a record of the freshmen in respect to previous training and scholarship difficulties. They also collected a great many other data in regard to individual students. I have no doubt that this information proved helpful in more ways than one in the handling of the individual. Of course it takes time and necessitates some clerical help. This year Professor Parker has assumed the work of Professor Sprague who is absent on leave, and Professor Machmer has come into my office as assistant dean. These men, therefore, can only do a

small part of the work which they did last year, and the other advisors are too busy to give this important matter any more time and attention than they did last year. I mention this matter simply to emphasize the need of extra help if the advising is to be done with thoroughness.

During the past year the faculty has superseded the old unclassified student arrangement by a new one called "special." It was felt that those who used to enter our "unclassified" group were now well served by the two-year short course, and that therefore we could dispense with it. The faculty, however, realized that there were certain types of experts who might be able to profit by our work who could not be served either by the regular course or by the two-year short course. It was ruled, therefore, that applicants for work in certain departments, whatever their previous technical schooling had been, could appeal to the heads of those departments to be allowed to do special work. If the head of the department is satisfied that the applicant has revealed special skill, or has had a satisfactory practical experience he is to recommend to the president that the applicant be admitted to take such work as may be planned by him either in the short course or the regular course, or in a combination of both. This group is called the special group.

This special student group makes the fourth or fifth distinct group in College at the present time, and the campus presents a larger diversity of groups and grades of students than ever before. This situation presents real problems for those who want to see a harmonious and happy college body. No class of persons in the world is more jealous of prerogative and tradition than the typical four-year student. Some of the men in the other groups, on the other hand, are unable to appreciate this undergraduate point of view. There is therefore a possibility of real friction in the present situation. I am glad to say, however, that thus far we have managed to live together without dissension or misunderstanding. Those who have been in charge of student affairs have handled the dangerous points with extremely good judgment and much wisdom. We are hoping that nothing will happen to spoil the excellent relations of the different groups, and to see them

crystallize into a relationship that will continue to promote good feeling and good will.

I should not close this report without a sincere expression of appreciation for the fine service rendered in the dean's office by Prof. Charles H. Patterson during the past two years. As acting dean he was most faithful and efficient in respect to countless details, and most gentlemanly and courteous in his relationships with the students.

EDWARD M. LEWIS,  
*Dean.*

### **Report of the Director of the Experiment Station.**

The greatest present problem before the Experiment Station is that of selection of fields of work. Shall the Experiment Station attempt to cover the whole field of agricultural research, or shall it endeavor to concentrate on a relatively few major problems, and devote all of its energies to their solution? This is a matter of institutional policy, and one which should be thoroughly studied before any radical changes are made in the existing order of things. Especially is it important that all suggestions for new lines of work be scrutinized with reference to their effect on the older lines, and to the possibility of the Experiment Station being able to command sufficient resources to support both classes of activities on a comprehensive basis.

As an aid in this suggested study, I am submitting herewith a statement showing the number of research projects now under way at the Experiment Station, classified primarily in relationship to the food problem of Massachusetts and of New England. It should be understood, however, that the number of projects at hand on a given subject is only a rough indication of the character and importance of the work being done.



DEPARTMENT.	EXPERIMENT STATION PROJECTS AS RELATED TO THE FOOD PROBLEM.												Totals by Departments.	
	PRODUCTION.								CONSERVATION.					
	PLANTS.				ANIMALS.				Basic Investigations.	Preservation Practice.	Distribution.	Miscellaneous.		
	Nutrition.	Adaptation, Ecology, Physiology.	Culture.	Protection.	Nutrition.	Physiology.	Protection.	Miscellaneous.						
Agricultural economics, .	-	-	-	-	-	-	-	-	-	-	4	-	2	6
Agriculture, . . . .	12	1	-	-	-	-	-	-	-	-	-	-	-	13
Botany, . . . . .	1	1	-	6	-	-	-	-	-	-	-	-	4	12
Cranberry station, .	-	-	3	3	-	-	-	-	-	-	-	1	-	7
Entomology, . . . .	-	-	-	12	-	-	-	-	-	-	-	1	-	13
Horticultural manufac- tures.	-	-	-	-	-	-	-	-	-	1	-	-	-	1
Horticulture, . . . .	-	8	3	1	-	-	-	-	-	-	-	1	-	13
Market-Garden Field Station.	2	2	2	2	-	-	-	-	-	-	-	-	-	8
Meteorology, . . . .	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Microbiology, . . . .	1	-	-	-	-	-	-	-	10	-	-	-	1	12
Plant and animal chem- istry.	3	1	-	2	6	-	-	-	-	-	-	-	-	12
Poultry husbandry, . .	-	-	-	-	-	2	1	1	-	-	-	-	-	4
Veterinary science, .	-	-	-	-	-	-	6	-	-	-	-	-	-	6
Totals, . . . . .	19	13	8	26	6	2	7	1	10	1	4	4	7	108

It will be noted that the mass of our station activities represent studies of problems of production. To a much lesser degree, and only recently, have problems of conservation and preservation been given attention in a thoroughgoing and comprehensive way. Even less attention has been given to problems of distribution and marketing, at date of writing six only out of one hundred, eight projects being devoted to this branch of agricultural research. Finally, the human or social problems of the countryside are receiving no attention.

Even if it be granted that all work actually under way is adequately covering the field indicated, it is still evident that the Experiment Station is at present unable to cover adequately the whole field of agricultural research. This fact becomes even more evident when the status of work actually under way is investigated. On account of shortage of land, the Department of Agriculture has given up several important

lines of work, and in other ways curtailed its activities. For the same reason investigations on tobacco soil sickness as carried on by the Department of Botany have been so severely handicapped as to seriously reduce their efficiency. On account of shortage in personnel, the Department of Entomology has been unable to follow up several lines of work started by Mr. Vinal and incomplete at the time of his death. Similarly the Department of Botany has been unable to give full service in the investigation of certain fruit diseases, even though the fruit growers of the State have been insistent in their demands for this class of work. These serve but as illustrations, but they indicate the necessity for most careful study of the whole body of station activities. This problem is now being studied by a committee from the Experiment Station staff, and report will be made in due course.

#### THE NEED OF ADDITIONAL LAND.

Apart from the question of institutional policy regarding the initiation of new lines of work, there is, as indicated above, immediate need for more land to be available for experimental purposes. It is certainly an anomaly that an agricultural experiment station should be handicapped by a shortage of land. Such, however, is the fact. The encroachment of buildings is primarily responsible for this state of affairs. Draper Hall, Flint Laboratory, the Poultry Plant, Stockbridge Hall, the Rural Engineering Shops, and, more lately the Abigail Adams House, — all these have contributed towards diminishing the area of land available for Experiment Station uses, and likewise through unavoidable trespass decreasing the value of land remaining. I feel that under the conditions the Experiment Station has given a wonderfully good account of itself, but there is grave danger that unless these conditions can be remedied the work will more and more be carried on in an impractical way and on a laboratory basis. It will be lacking in the vitality which comes from close touch with the problems of the land, and to this extent will be unable to render full service to the farmers of the State. Therefore I must urge that this matter be given prompt consideration.

## ADDITIONS TO THE EXPERIMENT STATION STAFF.

In order that the Experiment Station may better carry on existing lines of work there is need of additional assistants in a number of departments. Assistant research professors are needed in the Departments of Botany, Horticultural Manufactures, Pomology and Microbiology. In each of these departments the mass of work which has developed, largely through the greater understanding on the part of the people of the State of the service rendered by the Experiment Station, makes such additional assistants imperative. Other assistants are needed in the administration office, at the Market-Garden Field Station, and in the Department of Veterinary Science; while additional graduate assistants can be used to splendid advantage in the Departments of Agricultural Economics, Pomology and Microbiology.

All of the above are needed to give full service on accepted projects now carried on our lists. Other positions which should be considered in the near future, but which contemplate increasing the scope of station activities, are those of research professor of farm management, and research professor of rural sociology, respectively, in the Departments of Farm Management and Rural Sociology.

## PROJECT ORGANIZATION.

Within the past year a definite attempt has been made to place all of the Experiment Station work on a definitely outlined project basis. This change was instituted by Prof. F. W. Morse, formerly acting director, and much progress was made previous to my undertaking the responsibilities of the director's office. With this work nearing completion it becomes apparent that a thoroughgoing study and reclassification should be made of existing Experiment Station projects, and that in the future all new projects should be so outlined as to secure the co-operation of all departments concerned. In order that this may be done, committees have been appointed from the different departments in the Experiment Station to give this matter attention, and to report back to the station staff in the very near future. It is hoped that this procedure will result in a better organization of our research forces.

### THE CONTROL SERVICE.

The work of the chemical control service has been carried along the same efficient lines as in past years. To the labor involved in the annual fertilizer and feed inspection, and in the inspection of dairy glassware and apparatus, has been added that of the enforcement of the poultry disease elimination law. It is too early yet to make full report as to the results, but the demand for this service, evident at the beginning of the second year, indicates that it should be continued, if possible, on a more thoroughgoing basis than during the past season.

### ACKNOWLEDGMENT.

In conclusion I wish to acknowledge the hearty and loyal co-operation accorded me by the different members of the Experiment Station staff. I believe that the time which is usually lost in changing any administrative organization will be somewhat decreased through the services thus freely given. Particularly I wish to express my appreciation of the co-operation given me by Dr. William P. Brooks, formerly director of the station and now consulting agriculturist; Prof. F. W. Morse, formerly acting director; and Dr. J. B. Lindsey, vice-director of the station. All of these men have spared no pains in placing at my disposal all information needed in prosecuting the work.

SIDNEY B. HASKELL,

*Director.*

### Report of the Director of the Extension Service.

The most outstanding fact in the Extension Service during the year 1920 has been the number of resignations. At the beginning of the fiscal year six vacancies existed in the professional staff. But two of these vacancies are filled at the present writing. Since Dec. 1, 1919, the following have resigned: Laura Gifford, assistant State leader of home demonstration agents; John D. Zink, supervisor of exhibits and Extension schools; Delos L. James, Extension specialist in dairying; L. Wayne Army, Extension editor; Roy B. Cooley,



Extension specialist in animal husbandry; Henry E. Haslett, Extension specialist in sheep husbandry; Earl Jones, Extension specialist in soils and crops; and Helen M. Norris, assistant State leader of Junior Extension. During the year 33 clerks have been hired in order to keep 11 positions filled, and at present there are two vacancies. But two of the present staff of clerks were on the pay roll a year ago. Further evidence of the inability to fill positions at the salaries allowed may be found in the unexpended balance of \$5,600 in the salary account.

The one principal reason for this crippling overturn in personnel is the inability to pay as much for equal grade of work as is being paid by institutions of similar type in other States, and by private business. Connecticut, New York, Ohio and Indiana have outbid Massachusetts by several hundred dollars for each type of work. The average salary gain to those specialists who left the service during the year was in the neighborhood of \$900 each. Others have stayed at a fearful sacrifice through loyalty to the responsibilities that they have assumed, and a hope that a fair measure of justice will be done them in subsequent salary readjustments. The statistics of overturn in clerical staff are the only necessary comment on our inability to hold adequate clerical help at the prices which we have been paying. When it is remembered that it takes a well-qualified Extension man a year to make his contacts and pick up the threads of work throughout the State, the loss in continuity of work accomplished, and in the money cost to the State of training a new staff of specialists, may be appreciated. The same is true in a fair degree of the clerical staff; much technical matter is included in the work of every day, and it is of great importance that the clerk who assists each specialist be familiar with both subject-matter and personnel throughout the State with which the specialist deals. During the past year a staggering total of time and effort have been required by new specialists in starting work, and by all specialists in training clerks who have afterward left for more lucrative work. While a number of changes have come in the county staffs, the vacancies have been filled quickly, as the Trustees for County Aid to Agri-

culture have been able to offer salaries sufficient to attract capable men and women.

The demonstration project work of the Extension forces has been remarkably well maintained in view of the foregoing handicaps. A fair continuity in the county staffs and increasing numbers of farmers co-operating in the demonstrations made this possible.

The best practices in agriculture and home-making, which it is the task of the Extension forces to promote, are already being followed by individuals. Those farmers and home-makers who are successfully following them are the best teachers of others. It is on this basis that Extension work is growing. The specialist and county agent strengthen the practice of the co-operating demonstrator; if necessary, train the demonstrator to tell how he or she does the work; and organize the attention of the community to the demonstration. In this manner the demonstrator and the demonstration are always available, and the agent and specialist have reached scores instead of individuals. These continuing demonstrations also do much to bridge the gaps in work caused by vacancies on the staff, as good farmers who have once accepted good practice usually continue to follow it, and to spread the teaching. Few changes in project activities have been made during the year, and a separate detailed report will be made on each of these as soon as the statistics of the county work are complete.

Casual work presents a serious problem. Many inquiries are received daily from individuals, and these are given personal attention, not only by Extension specialists, but also, if necessary, by the resident teaching faculty. Such work must always be done. We also have met most of the calls for casual lectures, and have been able to relate a larger number than ever before to demonstration work. The lecture that is not so related is usually unproductive of any permanent good. The people who ask such lecture service are quite ready to see the value of continuing demonstration work, and by relating such effort to the county agent projects much gain has been made in comparison with former years.

To assist in meeting individual inquiries, and to aid in all

Extension teaching, the staff has worked out a plan for a basic literature of Extension work, and is also revising and bringing up to date the various correspondence courses. With these new aids we are in better position to meet the demands of the hundreds of thousands of suburbanites and village dwellers who have good right to expect of the College assistance in their matters of horticulture, food preservation, poultry keeping and home-making.

Relations with both the United States Department of Agriculture and county agents have been most cordial. The constructive suggestions of both have been the basis of some changes in policy and procedure. On the other hand, we find a great readiness on the part of the county staff to accept suggestions on subject-matter and on methods of demonstration.

Looking forward to the new year our principal need is for men and women of experience and capacity who can take up the work interrupted by resignations, and who can be sufficiently supported to enable their continuance with us for more than a brief time.

JOHN D. WILLARD,  
*Director.*

### **Report of the Director of the Graduate School.**

The time has arrived when it is desirable to present as briefly as possible a comprehensive yet concise survey of the Graduate School, that its purposes, its articulation with the College, its methods and its functions may be understood.

#### **PURPOSES OF THE GRADUATE SCHOOL.**

Agriculture is so big, so vast, that its values and its significance are unappreciated and even lost to the ignorant mind which does not know what it is; to the restricted mind, even though operating within the field of agriculture, which lives upon itself and within its own encasement; and to the keen and broad minds engaged in other provinces of thought. Its practical, scientific, commercial and social bearings are so intimately bound up with the physical welfare, therefore, the mental and social welfare, of every individual and nation, that to neglect any part of its study and development means



disaster to society. It is one of the essential elements without which no nation can succeed or grow.

There is reason for this peculiar situation regarding agriculture. The man who raises a good crop of corn in accordance with recognized practices thinks he knows agriculture; the man who handles the products on the markets will tell all about agriculture; the man who studies the underlying problems of soils and plants will set forth the facts of agriculture; and even the man who sits on the fence smoking his pipe, while the weeds grow, is a typical *exposé* of agricultural practices. Surprising, but it seems true, the one type condemns the other as theoretical, impracticable, unnecessary. In a way agriculture is familiar to everybody, yet it is probably the least understood vocation. Perhaps no field of activity lacks so conspicuously in unity to build up a profession, a task, and to circumscribe its content. Is it not lamentable that any one engaged in agricultural pursuits should minimize any other aspect of agriculture that he may foster his own and antagonize the general good of agriculture as a whole? He exploits only his own ignorance of the profession of which he is a part; he dishonors and degrades the most noble vocation given of God.

To understand agriculture in more specific terms, to comprehend the underlying principles of agriculture which serve as a directive and imperceptible guide, to grasp the operations of agriculture in its relations with commerce and the feeding of populations of the world, lead immediately to the most profound depths of learning and research, to the most skillful devices of man, and to the great multiplicity of human exchanges and events. Agriculture is like the background of a large painting holding complacently in its lap, as if fondling them, humans playing as many sustained parts of a drama as there are individuals.

An extensive western farmer makes a practice of sending his sons to engineering schools for their training, although he expects them home to resume farming. He avoids agricultural colleges. He has learned the value of the intensive training of the engineer, and has recognized the importance of mechanical devices on the farm. By so doing he has recognized,



however, only a single aspect of farming, although he understands the values of intensive education, and appreciates only a few values of agriculture. His ideas should be, more completely, engineering not only in mechanical devices, but in physics, chemistry, microbiology, botany, zoölogy, entomology, plant and animal diseases, plant and animal breeding, soil fertility, crop production, animal production, administration, business and social contacts. Such engineering courses are essential in the understanding and interpretation of agriculture, while the western farmer's attack is a single-track approach to it. This is not saying too much for agriculture, for how can soil be intelligently interpreted without a knowledge of the physics, chemistry and microbiology underlying its nature; how can crops be fully comprehended without a knowledge of the botanical laws of plant life; how can animals be known in health and disease without a knowledge of anatomy, physiology and the causes of disease; how can breeding proceed sanely without a knowledge of the genetic laws governing plants and animal life; how can man proceed to preserve food unless he knows the habits of those organisms which cause spoilage and poisoning; how can a man understand business in a wholesome manner unless he knows something about the principles of banking, transportation and other economic problems? These are only a few suggestive reflections in the vast field of agriculture. This answer may be made to the above questions: There are apparently quite successful farmers who would not qualify under these terms. This is allowed. As in every walk of life there exist "recipe" farmers as there exist "recipe" medical men, and they are needed, but this type never contributes to progress, although they sometimes produce sensational kaleidoscopic pictures within their own very restricted boundaries. Men may gain this training by individual study and experience. Such men are the strongest for such development, but, too, such men are very, very rare. Agriculture is suffering intensely from a lack of well-trained, understanding and sympathetic men, — men who are basicly and fundamentally trained, so well trained, in short, that they will be able to build out of the elemental material, rendered available from time to time, new practices,

new growth, and, in fact, progressive fundamental development in agriculture. Is a man a banker because he can buy a draft; a man a carpenter because he can shingle a roof; a man a merchant because he can sell carpetsweepers; and finally, is a man a farmer because he can grow a crop of corn? The greatest hindrance to professional agriculture at the present time is too frequently the antagonism offered by men who are actually engaged in agriculture, who occupy a very limited niche in agriculture, and who have only a very narrowed and restricted vision when regarding it; in other words, practical men of agriculture think only of formulated action without regard to agricultural development. Agriculture to such men is mere mechanical business.

No single human can master the entire field of agriculture. He should be in sympathy with every phase, and should have a general knowledge of every aspect to found his sympathy upon. *Intense specialization, therefore, after securing a general basic training, is almost essential for successful pursuit in any growing agricultural undertaking. Here is where the Graduate School functions:* After proper basic and general training has been obtained, in undergraduate study, it takes the student for intensive, comprehensive, effective and sympathetic training in the various special or prescribed fields of agriculture.

It follows that the Graduate School gives emphasis to a study in the —

1. Practices employed in agriculture as found in the Departments of Agronomy, Animal Husbandry, Dairying, Horticultural Manufactures, Landscape Architecture, Pomology, Poultry Husbandry, Vegetable Gardening.

2. Sciences underlying these practices as found in the Departments of Botany, Chemistry, Entomology, Mathematics, Microbiology, Physics, Veterinary Science, Zoölogy.

3. Economic phases of agriculture or business relations as found in the Departments of Agricultural Economics and Farm Management.

4. Social aspects of agriculture and rural life as found in the Departments of Agricultural Education and Rural Sociology.

## THE ARTICULATION OF UNDERGRADUATE AND GRADUATE WORK.

College undergraduate work should deal with such preparation as will enable a man to begin to pursue intimately, fundamentally, successfully, and without too great restriction, any special and selected line of study or practice related to agriculture in its relations to itself, to other subjects and to society. At the same time, it should equip him to appreciate intelligently his complete environment for purposes of social evolution, social contacts and usefulness in the world.

Graduate study and training lead to a more intensive, more specific and more masterful usefulness in definite fields; also to more exact and effective thinking, to greater initial values and to greater efficiency. While it is a continuation of undergraduate work with changed attitudes, methods and purposes, it brings to consciousness broader provinces of knowledge, a keener power of analysis and synthesis, and a greater capacity for creative and safe performance.

### REQUIREMENTS OF A GRADUATE SCHOOL.

1. First-class men for research and instruction, who have had or should have proper training, and should appreciate graduate study and its significance of values.

2. Equipment enabling men and students to pursue their studies and carry on research work unhampered.

Both of the above are to be found or should be found for undergraduate and Experiment Station efforts.

### THE APPRENTICESHIP SYSTEM.

In attempting to carry out the graduate study in this institution the apprenticeship system has been adopted. This consists in associating with each graduate instructor from one to three graduate assistants, who not only aid the instructor, but are brought into a more intimate contact with his special or major field of activity. While so closely associated with their major studies, these assistants or apprentices have the privilege of gaining such supporting work and broader interpretations as may be available in other departments of this



institution, or wherever such is to be found in other institutions, in its strongest form. By this scheme the cost to the institution is materially reduced as well or rendered nil. The system has worked so well that its value has not only been demonstrated to the institution, but it has enabled instructors to estimate the value of students thus employed much more accurately, and has contributed much to the training of students themselves.

### THE SPIRIT OF A GRADUATE SCHOOL.

A controlling spirit directs the destiny of purposes, likewise a controlling spirit pervades the atmosphere of a graduate school. It is not always easy to detect or define what form the spirit takes. That it makes for betterment in agriculture is patent, whether it is a spirit which favors practice, research, education or social conditions. As it reveals itself, it seeks in practice to widen the horizon, embodying a familiarity with the methods employed in various sections of the country; to deepen the knowledge of detail, circumstances, location, and all the known factors controlling or influencing; to understand the bearing of research and its application to practice; to relate practice to commerce and to amalgamate all elements involved into a useful country life of elevating character; it seeks in research to find those principles or laws which make working policies possible, and those facts which will serve agriculture as the fertile elements of the soil serve the plant (while these facts make it possible for "recipe" farmers to work their farms, they also furnish the material out of which the professional type of farmer creates new practices and new successes or improvement); it seeks in education to acquaint the individual with such knowledge as will make him a more effective agent, and give mental discipline for purposes of mental vigor and accuracy; it seeks to remind man that he is a social agent, a member of society, and has a social relation. Such is assumed to be a skeleton outline of the spirit, and, in short, it is the uplift-material of the individual in his social contacts and environments and his work as he is found in the country, but it is not the spirit which stimulates and produces. It is the channel through which the spirit struggles for results.



Underneath all of this should be a real constructive spirit-agent manifesting itself through enthusiasm in work and devotion to agriculture by a craving to find new truths and new facts which will aid; by an eagerness to disseminate such truths and facts as have been found useful and may become advantageous; by a keenness of purpose to establish practices upon a basis of proved evidence and not haphazard and careless observation. Such a spirit should take absolute possession of the energies of the individual, and should be productive to the greatest good; it should be as unhampered as possible, as free as is conformable with liberty; it should not be burdened and curbed by the friction of the stupendous burden of multiple organizing mechanisms or agents; it should possess an unharrowed existence, otherwise it will die. Its death is the death of progress.

#### OCCUPATION OF GRADUATE STUDENTS.

Fully as large a percentage enter some phase of agricultural work as is the case with the undergraduate students.

Some idea of the outlets for graduate students may be gained by the following concise suggestive statements from several of the departments doing graduate work.

*Department of Agricultural Education.* — Highly trained men are needed in the field of education, as teachers in the high schools and colleges; Extension teachers; supervisors and directors of agricultural and other vocational teaching; training teachers of agriculture; superintendents of rural schools; directors of the county Y. M. C. A. work, Boy Scouts and agricultural clubs; and as agricultural missionaries and trainers of rural teachers in the field of missions.

*Department of Agronomy.* — Men highly trained in the study of soil fertility and field crops are needed as teachers, research workers and specialists in our agricultural colleges, experiment stations and United States Department of Agriculture. In commercial work they are needed for research and in an advisory capacity. Such work includes soil survey, study of fertilizer resources, problems in the nutrition of plants, plant breeding, etc.

*Department of Botany.* — In botany there are large opportuni-

ties in several branches of the science. Teachers in general botany, mycology, pathology and physiology are in demand by agricultural colleges. Well-trained specialists for research, especially in pathology and physiology, are always needed by the experiment stations and the United States Department of Agriculture, and the supply never equals the demand. The call for trained botanists comes not alone from the institutions devoted to agriculture, for the science is taught in practically all colleges and universities. There are frequent opportunities to place men in both teaching and research positions, many of which are very desirable.

*Department of Chemistry.* — In chemistry, particularly in its relation to agriculture, the demand for well-trained chemists at the present time exceeds the supply. Men who specialize in chemistry in the undergraduate course are fitted for positions in agricultural industries, — fertilizer, feed and insecticide manufacture, — as well as in other lines of industry, and in the State experiment stations and commercial laboratories. Men are encouraged, by the aid of graduate assistantships, to take postgraduate courses and fit themselves for advanced positions in industry, as well as for teachers and research workers in our colleges and experiment stations. Well-trained men with ambition and earnestness of purpose are reasonably sure to secure satisfactory positions.

*Department of Entomology.* — Thoroughly trained men are needed in entomology, as Experiment Station entomologists and their assistants, in the same line of work; scientific assistants connected with the United States Bureau of Entomology, working on injurious insects in all parts of the country; entomologists connected with county farm bureaus, to advise, direct and supervise control work; Extension entomologists connected with the different agricultural colleges; teachers of entomology in agricultural high schools, other schools and in colleges; and as business men who contract for work as caretakers of trees, shrubs, etc., on estates, in cities and towns and elsewhere, protecting them from insect depredations and the attacks of disease, pruning, filling cavities, spraying and in other ways preserving them in good condition.

*Department of Landscape Gardening.* — There are unlimited opportunities for men of broad education and thorough tech-

nical training in landscape gardening, as, for example: in professional practice; in the employ of established architects, engineers, architects and town planners, State and municipal or private parks; as recreation engineers in parks and forests, in institutional planning and superintendence, in teaching and Extension work, with nursery firms and construction contractors, etc.

*Department of Microbiology.* — Microbiologists are needed in practical and research dairying, in soil biological studies, in food drying, refrigerating, canning, brining, fermenting and preserving; in food decomposition, poisoning and sanitation; in fermentations, as vinegar and industrial processes; in public health problems, as water supplies, sewage disposal, food supplies; in communicable diseases of men, plants and animals. Each of the latter in agriculture falls in specialized departments.

*Department of Poultry Husbandry.* — Highly trained men are needed in the field of poultry husbandry as investigators in the refrigeration of poultry; candling, packing and transportation of poultry and eggs; preparation of poultry for market (fattening); the study of the inheritance of various characters and functions; management; general sanitary methods and pathology; incubation, brooding and growth; also instructional work.

CHARLES E. MARSHALL,  
*Director.*

### Report of the Director of Short Courses.

The demand for Short Course work in this College, as may be seen from the following table, has steadily increased: —

	1918	1919	1920
The Two-Year Course, . . . . .	37	238	277
The Ten Weeks' Winter School, . . . . .	91	63	112
The Summer School, . . . . .	68	238	322 <sup>1</sup>
The Vocational Poultry Course, . . . . .	5	13	19

<sup>1</sup> Four and eight weeks.

The substantial financial support granted by the Legislature of the Commonwealth for Short Course work has enabled the College to meet this growing demand. The increased enrollment and the development of courses have given rise to problems that should have immediate consideration. These may be summarized as follows:—

1. The organization of intensive vocational lines of work in the second year of the Two-Year Course.
2. Provision for housing the student body.
3. The development of a separate Short Course staff.
4. A modification of the Ten Weeks' Winter School so that it will more fully serve the people of the Commonwealth.
5. The organization of social science courses in the Summer School.

*The Organization of Intensive Vocational Courses.*—The course of study for the Two-Year Course as now arranged provides for certain required courses during the first year, with a few electives. During the second year there are but few required courses, and the work is chiefly elective, as will be seen from the course of study included in this report. The present organization of the course fails to meet the real needs of the students. The interests of these students are very specialized. They wish to devote practically all of their time to one or two subjects. They object, and I share their objection, to being compelled to carry courses in which they are not interested merely to fill out the program. Students ask, for example, not for five hours a week of poultry or fruit growing, but ten or fifteen hours a week. I would respectfully suggest that we endeavor to reorganize the work of the second year, giving much more time to each of the subjects, and then permitting the students to carry but two major subjects with one required general course in addition; that is, a student might carry in one term, farm management, dairying, animal husbandry. I urge this modification for two reasons: (1) the men will be far better prepared for their life work; and (2) it will more clearly differentiate the four-year and the two-year work. The Two-Year Course is a vocational course and should be made such.

The following table, showing that 57 per cent of the students enrolled in the Two-Year Course are twenty-one years of age or



over, is included to point out the fact that this student body is relatively mature, and that the mind of the individual student is pretty well fixed on a certain goal before he comes to College: —

AGE (YEARS).	Number.	Per Cent.
17, . . . . .	19	6.7
18, . . . . .	33	11.3
19, . . . . .	34	12
20, . . . . .	36	13
21, . . . . .	26	9
22, . . . . .	24	8
23, . . . . .	19	7
24, . . . . .	14	5
25 and over, . . . . .	75	28
Totals, . . . . .	280	100

*Provision for Housing the Student Body.* — It will be noted that the attendance for the Winter School is small. Under present housing conditions it has to be kept small. The opportunities for service to the State are limited by the fact that Amherst does not provide sufficient housing accommodations. I wish to urge just as emphatically as possible the need for dormitories that will accommodate a portion of the student body. It is immaterial to my mind whether the dormitories be built for four-year men or for two-year men. The building of a dormitory will release a certain number of rooms that may be used for student accommodations, thus making it possible for us to house the students that come to the College.

*The Development of a Short Course Staff.* — Thus far no special Short Course staff has been organized for the instruction of the Short Course men, although a number of the general College staff are paid from Short Course funds. It seems to me the time has come when we should begin to develop a Short Course staff made up of men particularly fitted for this type of teaching. Such a staff would bear the same relation to the general staff that the Extension Service men now bear to the departments. There are two great advantages to this plan: (1) it creates a body of men who are especially interested

in the success of the Short Course students; and (2) it promotes good feeling between the four-year and the two-year men, in that neither will feel that the other has an advantage.

*A Modification of the Ten Weeks' Winter School.* — I wish to suggest a very radical change in the organization of the Ten Weeks' Winter School. All of the courses with one exception now offered in the Ten Weeks' Winter School run ten weeks, and the student has to take a general diversified program. There is one exception to this — there is the dairy school which is practically a separate school in itself. My suggestion is that there be organized a series of schools that would last, two, four, six, eight or ten weeks, and that all these schools come under the title of eight or ten weeks' winter schools. I think eight is preferable to ten, in that the students now enrolled in the Winter School of Ten Weeks are very anxious to leave during the last week or two to begin work.

*The Organization of Social Science Courses in the Summer School.* — The College should take through its Short Course work a more definite step toward the organization of social science courses in the Summer School. There is a demand — a demand that we have never met — for the preparation of men and women for social service. I suggest that we should begin this next year in the Summer School the development of courses that will fit men and women of maturity and rural experience for work in this field.

*The Federal Board for Vocational Education.* — The Federal Board for Vocational Education has selected this College as one of the training centers for the men disabled in military and naval service of the United States. These men vary in academic preparation from College graduates to men who have not completed the common schools. They range in age from eighteen to fifty years. The majority of them are enrolled in the Two-Year Course. The need of these men for education that will fit them for life is very great. The experience for the past two years has shown that the adjustment the men had to make from war to peace was far greater than the adjustment from peace to war. Approximately 50 Federal students will complete the Two-Year Course in March of this year. In order to make provision for the men who had no

previous education, or whose previous education was very limited, special unit courses were organized in co-operation with the Federal Board for Vocational Education. In these courses men were taught to read, write and speak the English language, besides being given instruction, at the same time, in agricultural and horticultural subjects. It is interesting to note that many of these men who practically had to be taught to read and write will be able, within the next six months, to enter the Two-Year Course. Approximately 300 Federal students have been enrolled in Short Courses since June, 1919.

*The Summer School for 1920* was managed co-operatively by the Massachusetts Agricultural College and the Division of Elementary and Normal Schools of the State Department of Education. The College offered subjects in agriculture, horticulture and related subjects. The State Department of Education provided courses in elementary education for teachers. The arrangement was even more popular than for the summer of 1919. Many expressions of appreciation of the plan were offered by the students. By special arrangement courses were provided for the Federal students. I suggest that the plan of co-operation between the two agencies be continued for another summer.

*Supervision of Farm Practice.* — The need of supervision of the students in the Two-Year Course, during the six months that they are required to work on a farm, was met by the appointment of Mr. Willard K. French as assistant professor of farm management. Mr. French has undertaken the work with a good deal of enthusiasm and energy. I feel sure that under his direction the six months spent on a farm by our two-year students will be of very great value to the whole course. Mr. French's duties include, also, assisting the men to find positions on completion of their course.

JOHN PHELAN,  
*Director.*

## TABLES AND STATISTICS.

TABLE I. — *Resignations.*

POSITION.	Name.
Supervisor of Correspondence Courses and Extension editor, ..	L. Wayne Army.
Stenographer, Department of Rural Home Life, . . . .	Nellie V. Barkhouse.
Private secretary, president's office, . . . . .	Evelyn Brewster.
Clerk, treasurer's office, . . . . .	Ruth Brooks.
Instructor in physics, . . . . .	Henry J. Burt.
Assistant chemist, Experiment Station, . . . . .	Arthur M. Clarke.
Professor of forestry, . . . . .	William D. Clark.
Clerk, treasurer's office, . . . . .	Grace M. Colburn.
Extension assistant professor of animal husbandry, . . . .	Roy B. Cooley.
Assistant professor of agronomy, . . . . .	Herbert P. Cooper.
Cataloguer at library, . . . . .	Lalia M. Damon.
Instructor in poultry husbandry, . . . . .	A. Lawrence Dean.
Library assistant, . . . . .	Louise J. Delano.
Assistant, Department of Physical Education, . . . . .	Llewelyn L. Derby.
Clerk, Department of Microbiology, . . . . .	Marion F. Dondale.
Clerk, Extension Service, . . . . .	Hazel E. Donovan.
Clerk, power plant, . . . . .	Noellia C. Duval.
Stenographer, treasurer's office, . . . . .	Charlotte E. Erickson.
Library assistant, . . . . .	Lottie M. Fosdick.
Stenographer, registrar's office, . . . . .	Margaret Gaskill.
Assistant leader, rural home economic projects, . . . . .	Laura R. Gifford.
Clerk, Extension Service, . . . . .	Lillian S. Hadfield.
Clerk, Department of Agricultural Economics, . . . . .	Laura W. Hager.
Stenographer, Extension Service, . . . . .	Catherine A. Harrington.
Extension specialist in sheep husbandry, . . . . .	Henry E. Haslett.
Clerk, Extension Service, . . . . .	Marion Hawthorne.
Instructor in microbiology, . . . . .	Edgerton G. Hood.
Instructor in animal husbandry, . . . . .	Richard L. Holden.
Assistant in veterinary science, . . . . .	T. George Hull.
Assistant in physical education, . . . . .	Brooks F. Jakeman.
Extension specialist in dairying, . . . . .	Delos L. James.
Extension associate professor of agronomy, . . . . .	Earl Jones.
Assistant physical education, . . . . .	Arthur M. McCarthy.



TABLE I. — *Resignations* — Concluded.

POSITION.	Name.
Professor of animal husbandry, . . . . .	John C. McNutt.
Instructor in agronomy, . . . . .	Frederick G. Merkle.
Extension professor of community planning, . . . . .	Ezra L. Morgan.
Associate professor of language and literature, . . . . .	Robert W. Neal.
Extension instructor in agricultural education, . . . . .	Helen M. Norris. <sup>1</sup>
Resident nurse, . . . . .	Elizabeth Olmstead.
Clerk, president's office, . . . . .	Rachel C. Packard.
Clerk, Extension Service, . . . . .	Helen L. Phillips.
Clerk, Department of Dairying, . . . . .	Frances Powers.
Chief clerk, Extension Service, . . . . .	Jessie M. Prince.
Clerk, president's office, . . . . .	Marjorie T. Silcox.
Field agent, . . . . .	Almon W. Spaulding.
Instructor in farm management, . . . . .	Leland Spencer.
Clerk, treasurer's office, . . . . .	Miriam Spencer.
Stenographer, Extension Service, . . . . .	Marjorie E. Sullivan.
Stenographer, Extension Service, . . . . .	Aline B. Suprenant.
Stenographer, Extension Service, . . . . .	Clara A. Swift.
Associate professor of physics, . . . . .	Harry C. Thompson.
Instructor in dairying, . . . . .	Stanley E. VanHorn.
Clerk, Division of Agriculture, . . . . .	Marion L. Warner.
Instructor and foreman in vegetable gardening, . . . . .	Gilbert S. Watts.
Stenographer, Department of Botany, . . . . .	Ellen L. Welch.
Instructor in dairying, . . . . .	Fred E. Wheeler.
Stenographer, Extension Service, . . . . .	Mrs. Ruth S. Worthley.
Assistant to the director, Extension Service, . . . . .	John D. Zink.

<sup>1</sup> Resignation takes effect Dec. 18, 1920.TABLE II. — *New Appointments.*A. *In the Academic Departments.*

POSITION.	Name.	Degrees.
Instructor in mathematics, . . .	Francis P. Clark, . . .	B.Sc., Catholic University, 1920.
Instructor in entomology, . . .	William L. Dowd, . . .	B.Sc., Massachusetts Agricultural College, 1920.
Assistant professor of farm management.	Willard K. French, . . .	B.Sc., Massachusetts Agricultural College, 1919.
Professor of forestry, . . .	Laurence R. Grose, . . .	A.B., Brown University; M.F., Harvard Forestry School.
Professor of physics, . . .	Elmer A. Harrington, . . .	A.B., Clark College, 1905; A.M., Clark University, 1906; Ph.D., Clark University, 1915.

TABLE II. — *New Appointments* — Continued.A. *In the Academic Departments* — Concluded.

POSITION.	Name.	Degrees.
Instructor in market gardening, .	Roy D. Harris, . .	B.Sc., Middlebury College, 1920.
Assistant, physical education, .	Brooks F. Jakeman, .	B.Sc., Massachusetts Agricultural College, 1920.
Instructor in microbiology, . .	James Neill, . . .	B.Sc., Allegheny College.
Instructor in horticultural manufactures.	William F. Robertson, .	B.Sc., Massachusetts Agricultural College, 1920.
Instructor in poultry husbandry, .	William E. Ryan, . .	B.Sc., Massachusetts Agricultural College, 1916.
Professor of animal husbandry, .	Schuyler M. Salisbury, .	B.Sc., Ohio State University, 1913.
Professor of rural sociology, . .	Newell L. Sims, . . .	A.M., Columbia University, 1910; Ph.D., Columbia University, 1913.
Instructor in home economics, .	Mrs. Julia G. Strahan, .	B.Sc., Teachers' College, 1920.
Instructor in animal husbandry, .	Weston C. Thayer, . .	B.Sc., Massachusetts Agricultural College, 1920.
Instructor in agronomy, . . .	Guy A. Thelin, . . .	B.Sc., South Dakota Agricultural College, 1920.
Instructor in physics, . . .	Alfred L. Tower, . . .	B.Sc., Massachusetts Agricultural College, 1914.
Instructor in dairying, . . .	Glen E. Upton, . . .	B.Sc., Cornell University, 1920.
Assistant professor of dairying, .	T. George Yaxis, . . .	B.Sc., New Hampshire College, 1914; M.Sc., Cornell University, 1917.

B. *In the Experiment Station.*

Director, . . . . .	Sidney B. Haskell, . .	B.Sc., Massachusetts Agricultural College, 1904.
Assistant research professor of veterinary science.	John B. Lentz, . . .	A.B., Franklin and Marshall College, 1908; V.M.D., University of Pa., 1914.
Research professor of pomology, .	Jacob K. Shaw, . . .	B.Sc., University of Vermont, 1899; M.Sc., Massachusetts Agricultural College, 1908; Ph.D., Massachusetts Agricultural College, 1911.
Assistant chemist, . . . . .	Raymond W. Swift, . .	B.Sc., Massachusetts Agricultural College, 1920.
Investigator in entomology, . . .	Harlan N. Worthley, . .	B.Sc., Massachusetts Agricultural College, 1920.

C. *In the Extension Service.*

Supervisor of Extension schools and exhibits.	Robert D. Hawley, . .	B.Sc., Massachusetts Agricultural College, 1920.
Extension editor and supervisor of Correspondence Courses.	Louis M. Lyons, . . .	B.Sc., Massachusetts Agricultural College, 1918.
Extension professor of farm management and demonstrations.	Allister F. McDougall, .	B.Sc., Massachusetts Agricultural College, 1913.
Extension professor of agricultural economics.	Robert J. McFall, . . .	A.B., Geneva College, 1912; A.M., Glasgow University, 1914; Ph.D., Columbia University, 1916.
Extension assistant professor of landscape gardening.	William E. Philbrick, <sup>1</sup> .	B.Sc., Massachusetts Agricultural College, 1912.
Assistant State home demonstration agent.	Lucy M. Queal, <sup>2</sup> . . .	B.Sc., Teachers' College, 1920.
Extension assistant professor of home economics.	Mrs. Ruth S. Reed, . .	- - -
Assistant State home demonstration agent.	Marie Sayles, . . .	M.Sc., Teachers' College.

<sup>1</sup> To take effect Jan. 1, 1921.<sup>2</sup> Temporary.

TABLE II. — *New Appointments* — Continued.  
*D. Miscellaneous.*

POSITION.	Name.	Degrees.
Field agent, . . . . .	George M. Campbell, . . . . .	B.Sc., Massachusetts Agricultural College, 1920.
Resident nurse, . . . . .	Grace Charman, . . . . .	- - -
Resident nurse, . . . . .	Marguerite Davis, . . . . .	- - -
Superintendent of dairy manufactures.	Adelbert Sheffield, . . . . .	- - -

*E. In the Clerical Staff.*

POSITION.	Name.
Library assistant, . . . . .	Florence Archibald.
Stenographer, Extension Service, . . . . .	Mrs. Esther W. Arp.
Stenographer, Department of Rural Home Life, . . . . .	May G. Arthur.
Clerk, Department of Microbiology, . . . . .	Mrs. Celena M. Baxter.
Clerk, Department of Dairying, . . . . .	Ruth L. Brown.
Library assistant, . . . . .	Margery Burnett.
Bookkeeper, treasurer's office, . . . . .	Grace Corbett.
Stenographer, Extension Service, . . . . .	Florence E. Day.
Stenographer, Department of Rural Sociology, . . . . .	Rose Delaney.
Clerk, power plant, . . . . .	Hazel Donovan.
Stenographer, president's office, . . . . .	Margaret Fish.
Stenographer, Department of Agronomy, . . . . .	Katherine Harris.
Clerk, Department of Physical Education, . . . . .	E. Franklin Holland.
Stenographer, dean's office, . . . . .	Gertrude E. Hollis.
Stenographer, president's office, . . . . .	Catharine E. Honney.
Cataloguer, library, . . . . .	Florence B. Kimball.
Stenographer, Division of Agriculture, . . . . .	Aline J. Legare.
Stenographer, treasurer's office, . . . . .	Marion B. Macarty.
Stenographer, Market-Garden Field Station, . . . . .	Edith Meehan.
Assistant librarian, . . . . .	Katherine Middleton.
Stenographer, Extension Service, . . . . .	Doris Millett.
Clerk, treasurer's office, . . . . .	Mrs. Jessie A. Neill.
Stenographer, registrar's office, . . . . .	Julietta O'Donnell.
Clerk, Extension Service, . . . . .	Corinne T. Petit.
Stenographer, Extension Service, . . . . .	Mildred Putney.
Private Secretary, Division of Rural Social Science, . . . . .	Helen M. Rand.
Stenographer, Extension Service, . . . . .	Helen Reardon.

TABLE II. — *New Appointments* — Concluded.*E. In the Clerical Staff* — Concluded.

POSITION.	Name.
Stenographer, Extension Service, . . . . .	Josephine B. Reed.
Clerk, treasurer's office, . . . . .	Mrs. Ruth L. Rodwaye.
Stenographer, Division of Horticulture, . . . . .	Ora E. Rouleau.
Clerk, Extension Service, . . . . .	Sadie Shores.
Clerk, president's office, . . . . .	Harriet A. Smith.
Clerk, Department of Agricultural Economics, . . . . .	Mary A. Smith.
Clerk, treasurer's office, . . . . .	Miriam Spencer.
Stenographer, Extension Service, . . . . .	Catherine White.
Stenographer, Extension Service, . . . . .	Mrs. Ruth S. Worthley.

TABLE III. — *Speakers for the Year.**A. Speakers at Wednesday Assembly for Year ending Nov. 30, 1920.***1919.**

- Dec. 3. — Prof. Harold Whitehead, Boston University, Boston.  
 Dec. 10. — Prof. Winthrop S. Welles, M. A. C.  
 Dec. 31. — Prof. Frank A. Waugh, M. A. C.

**1920.**

- Jan. 7. — Student forum.  
 Jan. 14. — Prof. Ernest Barker, Oxford University, England.  
 Jan. 21. — Mr. Sam Higginbottom, India.  
 Jan. 28. — Signora Agresti, Rome.  
 Feb. 4. — Dr. Rosalie S. Morton, New York City.  
 Feb. 11. — Hon. Allen T. Treadway, Washington, D. C.  
 Feb. 18. — Student forum conducted by Prof. R. J. Sprague.  
 Feb. 25. — Mr. Walter H. Smith, Manchester, N. H.  
 Mar. 3. — Student forum.  
 Mar. 10. — Student forum.  
 Mar. 31. — Student forum conducted by Prof. R. J. Sprague.  
 Apr. 7. — Director John D. Willard, M. A. C.  
 Apr. 14. — Student forum conducted by Prof. R. J. Sprague.  
 Apr. 21. — Rev. Harold Marshall, Boston.  
 Apr. 28. — Student forum.  
 May 5. — Mr. Charles A. Lyman, Washington, D. C.  
 May 12. — Freshman-Sophomore debate.  
 May 19. — Rev. J. Burford Parry, Springfield.  
 June 2. — Burnham prize contest.  
 June 9. — Prof. L. H. Bailey, Ithaca, N. Y.  
 Sept. 29. — Pres. Kenyon L. Butterfield.  
 Oct. 6. — Student forum.  
 Oct. 13. — Mr. J. Horace McFarland, Harrisburg, Pa.  
 Oct. 20. — Mr. Ezra L. Morgan, Washington, D. C.  
 Oct. 27. — Student forum.  
 Nov. 3. — Mr. Roger W. Babson, Wellesley, Mass.  
 Nov. 10. — Pres. Frank P. Speare, Boston.  
 Nov. 17. — Mr. George T. Powell, Brookfield.



*B. Speakers at Sunday Chapel for Year ending Nov. 30, 1920.***1919.**

Dec. 7. — Rev. Samuel A. Eliot, Boston.

Dec. 14. — Rev. William H. Day, Bridgeport, Conn.

**1920.**

Jan. 4. — Rev. William A. Atkinson, Amherst.

Jan. 11. — Bishop Edwin H. Hughes, Malden.

Jan. 18. — Rev. Jason Noble Pierce, Dorchester

Jan. 25. — Dr. William E. Strong, Boston.

Feb. 1. — Dr. Sidney L. Gulick, New York City.

Feb. 8. — Mr. Alfred E. Stearns, Andover.

Feb. 15. — Rev. W. W. Weeks, Springfield.

Feb. 22. — Mr. Hamilton Holt, New York City.

Feb. 29. — Mr. Albert E. Roberts, New York City.

Mar. 7. — Dr. John Herman Randall, New York City.

Mar. 14. — Rev. J. Burford Parry, Springfield.

Apr. 4. — Dr. John M. Tyler, Amherst.

Apr. 11. — Rev. J. Edgar Park, West Newton.

Apr. 18. — Pres. John M. Thomas, Middlebury, Vt.

Apr. 25. — Rev. Archibald Black, Boston.

Oct. 3. — Pres. Kenyon L. Butterfield.

Nov. 7. — Hon. William H. Taft, New Haven, Conn.

Nov. 14. — Rev. John Herman Randall, New York City.

Nov. 21. — Rev. William A. Atkinson, Amherst.

**TABLE IV. — Attendance.***A. In Work of College Grade.*

CLASS.	REGISTRATION NOV. 30, 1919.			REGISTRATION NOV. 30, 1920.		
	Men.	Women.	Total.	Men.	Women.	Total.
Graduate students, . . . .	31	2	33	41	7	48
Senior class, . . . . .	110	3	113	94	3	97
Junior class, . . . . .	100	3	103	94	5	99
Sophomore class, . . . . .	108	4	112	96	8	104
Freshman class, . . . . .	116	9	125	124	11	135
Unclassified students, . . .	24	9	33	9	1	10
Special students, . . . . .	—	—	—	11	2	13
Totals, . . . . .	489	30	519	469	37	506

*B. Short Course Enrollment.*

Two-Year Course, second year,	18	—	18	125	10	135
Two-Year Course, first year, .	183	8	191	130	12	142
Vocational Poultry Course, .	13	—	13	19	—	19
Rural Engineering Course, .	16	—	16	—	—	—
Unit Course, . . . . .	—	—	—	50	—	50
Totals, . . . . .	230	8	238	314	22	336

TABLE IV. — *Attendance* — Concluded.*C. Other Short Course Enrollment.*

	REGISTRATION 1918-19.			REGISTRATION 1919-20.		
	Men.	Women.	Total.	Men.	Women.	Total.
Winter school, . . . . .	43	20	63	90	22	112
Summer school, . . . . .	46	192	238	107	150	257
Summer school for Federal men, . . . . .	31	—	31	65	—	65
Six weeks' course, . . . . .	22	1	23	—	—	—
Totals, . . . . .	142	213	355	262	172	434

*D. Convention Registration.*

	1919.	1920.
Farmers' week, . . . . .	898	1,301
County agents' conference, . . . . .	30	85
Poultry convention, . . . . .	200	400
Boys' camps, . . . . .	52	160
Girls' camp, . . . . .	33	186
	1,213	2,132

TABLE V. — *Legislative Budget, 1920.*

ITEMS.	Amount asked.	Amount granted.
Library building and equipment, . . . . .	\$425,000	—
Chemistry laboratory, . . . . .	600,000	—
Miscellaneous improvements and equipment, . . . . .	120,000	\$50,000
House for farm help, . . . . .	5,000	—
Extension for rural engineering shops, . . . . .	25,000	—
Improvements at power and heating plant, . . . . .	80,000	—
Stable for cavalry unit, . . . . .	15,000	15,000
	\$1,270,000	\$65,000

TABLE VI. — *Current Account, State Funds.*

	Requested 1920.	Appro- priated 1920.	Deficiency Appro- priation. <sup>1</sup>	Expended 1920.	Balance.
Personal services: —					
Administration, . . .	\$40,220	\$38,000	—	\$38,082 71	—\$82 71
Instruction, . . .	170,350	159,000	+\$215 56	149,319 85	9,895 71
General maintenance, . .	112,285	108,000	+145 65	110,672 91	—2,527 26
Experiment Station, . .	62,510	41,000	—	43,060 36	—2,060 36
Extension Service, . .	125,260	54,000	+5 60	48,371 91	5,633 69
Market-Garden Field Station,	5,400	5,400	—	5,277 29	122 71
Short Courses, . . .	27,270	25,600	—	27,306 65	—1,706 65
Travel, office and other ex- penses.	41,325	41,000	+3,382 68	47,790 04	—3,407 36
Teaching, laboratory supplies and equipment.	70,600	67,000	+2,333 81	60,667 72	8,666 09
Experiment Station: —					
Supplies and equipment, .	14,050	10,000	+717 53	13,989 17	—3,271 64
Travel and office expenses, .	6,550	5,000	+99 16	3,314 54	1,784 62
Extension Service, supplies, equipment, travel, etc.	68,130	40,000	+976 28	36,416 55	4,559 73
Short Courses, . . .	14,475	14,000	+56 45	7,940 56	6,115 89
Heat, light and power, . .	45,000	45,000	+325 95	65,803 86	—20,477 91
Farm, . . .	26,780	26,780	+2,615 72	35,267 65	—5,871 93
Repairs, ordinary, . . .	17,000	17,000	+132 00	16,898 28	233 72
Replacements, . . .	5,000	3,700	—	2,644 54	1,055 46
Market-Garden Field Station,	3,000	3,000	+50 12	2,680 21	369 91
Fertilizer law control, . .	12,500	12,500	+83 93	12,410 84	173 09
Poultry disease law, . .	4,000	3,000	+263 28	3,064 98	198 30
Milk-testing inspection law, .	550	550	—	525 08	24 92
Trustees, expenses, . . .	1,200	1,200	+134 86	798 39	536 47
Printing reports, . . .	6,000	5,500	—	1,641 27	3,858 73
Commercial feedstuffs, . .	6,000	6,000	+17 00	5,769 91	249 09
Totals, . . .	\$858,455	\$732,230	\$11,555 58	\$739,713 27	\$4,072 31

<sup>1</sup> Deficiency appropriation to meet expenses incurred in 1918-19.

TABLE VII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1920.**A. Home Addresses of Students (classified by Towns and Cities).*

Adams, . . . . .	1	Hadley, . . . . .	1	Orange, . . . . .	2
Amherst, . . . . .	10	Hatfield, . . . . .	1	Pepperell, . . . . .	1
Ashfield, . . . . .	1	HAVANA, CUBA, . . . . .	1	PITTSFIELD, . . . . .	1
ATTLEBORO, . . . . .	1	Holbrook, . . . . .	1	PROVIDENCE, R. I., . . . . .	1
Barre, . . . . .	1	Holden, . . . . .	1	QUINCY, . . . . .	3
Belchertown, . . . . .	1	HOLYOKE, . . . . .	3	Rajputana, India, . . . . .	1
Belgrade, Serbia, . . . . .	1	Homestead, Pa., . . . . .	1	Rehoboth, . . . . .	1
Belmont, . . . . .	1	Kensington, Md., . . . . .	1	REVERE, . . . . .	1
Bernardston, . . . . .	1	Lancaster, . . . . .	1	Rockland, . . . . .	2
BEVERLY, . . . . .	1	Larchmont, N. Y., . . . . .	1	Royalston, . . . . .	1
Bloomfield, N. J., . . . . .	1	LEOMINSTER, . . . . .	1	Shelburne, . . . . .	2
Bosnia, Serbia, . . . . .	1	LOWELL, . . . . .	1	SOMERVILLE, . . . . .	1
BOSTON, . . . . .	6	LYNN, . . . . .	1	SPRINGFIELD, . . . . .	2
Bound Brook, N. J., . . . . .	1	Mansfield, . . . . .	1	Suffield, Conn., . . . . .	1
BROCKTON, . . . . .	2	Marblehead, . . . . .	1	Summit, N. J., . . . . .	1
Brookline, . . . . .	2	MARLBOROUGH, . . . . .	1	Sunderland, . . . . .	1
CAMBRIDGE, . . . . .	5	Medfield, . . . . .	1	Swampscott, . . . . .	1
Camden, Me., . . . . .	1	MEDFORD, . . . . .	1	TAUNTON, . . . . .	1
Charlestown, N. H., . . . . .	1	MELROSE, . . . . .	2	Townsend, . . . . .	1
Chepachet, R. I., . . . . .	1	Milford, . . . . .	1	WALTHAM, . . . . .	1
Chester, . . . . .	1	Millville, . . . . .	1	Ware, . . . . .	1
Concord, . . . . .	1	Milton, . . . . .	1	Wareham, . . . . .	1
Deerfield, . . . . .	1	Montague, . . . . .	2	Webster, . . . . .	1
East Bridgewater, . . . . .	1	Needham, . . . . .	1	Weehawken, N. J., . . . . .	1
East Longmeadow, . . . . .	1	New Platz, N. Y., . . . . .	1	West Bridgewater, . . . . .	2
FALL RIVER, . . . . .	1	NEW YORK, N. Y., . . . . .	1	WESTFIELD, . . . . .	3
FITCHBURG, . . . . .	3	NEWTON, . . . . .	5	Westport, . . . . .	1
Framingham, . . . . .	1	NORTHAMPTON, . . . . .	1	Wilbraham, . . . . .	4
GLOUCESTER, . . . . .	1	North Andover, . . . . .	1	WORCESTER, . . . . .	3
Greenfield, . . . . .	2	Oakham, . . . . .	1	WILLIMANTIC, CONN., . . . . .	1

*B. Home Addresses (classified by States).*

	Number.	Per Cent.		Number.	Per Cent.
Connecticut, . . . . .	2	1.48	New Jersey, . . . . .	4	2.97
Cuba, . . . . .	1	.74	New York, . . . . .	3	2.22
India, . . . . .	1	.74	Pennsylvania, . . . . .	1	.74
Maine, . . . . .	1	.74	Rhode Island, . . . . .	2	1.48
Maryland, . . . . .	1	.74	Serbia, . . . . .	2	1.48
Massachusetts, . . . . .	116	85.93		135	100.00
New Hampshire, . . . . .	1	.74			



TABLE VII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1920 — Continued.**C. Home Addresses (classified by Counties of Massachusetts).*

	Number.	Per Cent.		Number.	Per Cent.
Berkshire, . . .	2	1.72	Middlesex, . . .	22	18.97
Bristol, . . .	6	5.17	Norfolk, . . .	9	7.76
Essex, . . .	6	5.17	Plymouth, . . .	8	6.90
Franklin, . . .	12	10.35	Suffolk, . . .	7	6.03
Hampden, . . .	14	12.07	Worcester, . . .	15	12.93
Hampshire, . . .	15	12.93		116	100.00

*D. Nativity of Parents.*

	Number.	Per Cent.
Neither parent foreign born, . . . . .	93	68.89
Both parents foreign born, . . . . .	23	17.04
Father (only) foreign born, . . . . .	8	5.93
Mother (only) foreign born, . . . . .	10	7.40
No statistics, . . . . .	1	.74
	135	100.00

*E. Education of Father.*

	Number.	Per Cent.
Common school, . . . . .	56	41.43
High school, . . . . .	31	22.96
Business school, . . . . .	11	8.15
College or university, . . . . .	33	24.45
No statistics, . . . . .	4	2.96
	135	100.00

TABLE VII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1920 — Continued.**F. Religious Census.*

	MEMBERSHIP.		PREFERENCE.		TOTALS.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Baptist, . . . . .	9	6.67	2	1.48	11	8.15
Catholic, . . . . .	13	9.63	2	1.48	15	11.11
Congregationalist, . . . . .	39	28.89	15	11.12	54	40.00
Episcopal, . . . . .	10	7.41	1	.74	11	8.15
Methodist, . . . . .	6	4.44	6	4.44	12	8.89
Presbyterian, . . . . .	3	2.22	—	—	3	2.22
Unitarian, . . . . .	8	5.93	3	2.22	11	8.15
Universalist, . . . . .	3	2.22	2	1.48	5	3.70
Miscellaneous, . . . . .	7	5.19	5	3.70	12	8.89
No statistics, . . . . .	1	.74	—	—	1	.74
	99	73.34	36	26.66	135	100.00

*G. Occupation of Father.*

	Number.	Per Cent.
Agriculture and horticulture, . . . . .	28	20.75
Artisans, . . . . .	29	21.49
Business, . . . . .	33	24.43
Deceased or no statistics, . . . . .	14	10.37
Miscellaneous, . . . . .	15	11.11
Professional, . . . . .	16	11.85
	135	100.00

*H. Intended Vocation of Student.*

	Number.	Per Cent.
Agriculture or horticulture (practical), . . . . .	57	42.23
Agriculture or horticulture (professional), . . . . .	39	28.89
Professions, . . . . .	3	2.22
Miscellaneous, . . . . .	5	3.70
Undecided or no statistics, . . . . .	31	22.96
	135	100.00

TABLE VII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1920 — Concluded.**I. Farm Experience.*

	Number.	Per Cent.
Brought up on a farm, . . . . .	43	31.85
Not brought up on a farm and having no or practically no farm experience.	26	19.26
Not brought up on a farm, but having had some farm experience,	66	48.89
	135	100.00

*J. Miscellaneous Statistics.*

Average age, . . . . . 19.30 years

TABLE VIII. — *Cases treated at the Infirmary Dec. 1, 1919, to Nov. 30, 1920.*

	Daily Count.	Individual.
<b>1919</b>		
December 1 to 31: —		
House cases, . . . . .	29	7
Out-patients, . . . . .	84	41
<b>1920</b>		
January 1 to 31: —		
House cases, . . . . .	143	35
Out-patients, . . . . .	159	94
February 1 to 29: —		
House cases, . . . . .	189	23
Out-patients, . . . . .	59	47
March 1 to 31: —		
House cases, . . . . .	12	4
Out-patients, . . . . .	33	22
April 1 to 30: —		
House cases, . . . . .	43	6
Out-patients, . . . . .	35	20
May 1 to 31: —		
House cases, . . . . .	23	5
Out-patients, . . . . .	68	21
June 1 to 30: —		
House cases, . . . . .	17	2
Out-patients, . . . . .	43	10
September 15 to 30: —		
House cases, . . . . .	1	1
Out-patients, . . . . .	11	7
October 1 to 31: —		
House cases, . . . . .	98	15
Out-patients, . . . . .	72	33
November 1 to 30: —		
House cases, . . . . .	96	12
Out-patients, . . . . .	66	31
Number of house cases, . . . . .		651
Number of out-patients, . . . . .		630
Total, . . . . .		1,281
Number cared for in the house, . . . . .		110
Number cared for as out-patients, . . . . .		326
Total, . . . . .		436

TABLE IX. — *Selected List of Publications of the Officers of the Institution*  
(December, 1919 — November, 1920).

- ARMY, L. WAYNE. Supervisor of Correspondence Courses.  
Editing the Farm Bureau Paper. Massachusetts Agricultural College. Extension Service. Extension Bulletin No. 28, December, 1919. 20 p.
- BEALS, CARLOS L. Assistant Research Professor of Chemistry.  
The Nutritive Value of Cattle Feeds. I. Velvet Bean Feed for Farm Stock. Massachusetts Agricultural Experiment Station. Bulletin No. 197, September, 1920. p. 61-74.  
The Nutritive Value of Cattle Feeds. II. Oat Feed for Farm Stock. Massachusetts Agricultural Experiment Station. Bulletin No. 200, November, 1920.
- BOURNE, A. I. Investigator in Entomology.  
Aphids or Plant Lice. Massachusetts Agricultural College. Extension Service. Extension Circular No. 79 M, 1920. 3 p.
- BROOKS, WILLIAM P. Consulting Agriculturist.  
A Fertilizer Experiment with Asparagus. Massachusetts Agricultural Experiment Station. Bulletin No. 194, December, 1919. p. 231-257.  
Methods of Applying Manure. Massachusetts Agricultural Experiment Station. Bulletin No. 196, September, 1920. p. 39-60.
- BUTTERFIELD, KENYON L. President.  
The Present Crisis. Baccalaureate Address. Massachusetts Agricultural College, June 20, 1920. Abstract in "Springfield Republican," June 20, 1920.  
President's Address. In Proceedings of the Third National Country Life Conference, October, 1920.
- CANCE, ALEXANDER E. Professor of Agricultural Economics.  
Prepare for the Census Taker. In County Farm Bureau Bulletins, December, 1919.
- CHAPMAN, GEORGE H. Research Professor of Botany.  
Curing and Fermentation Troubles of Tobacco and their Control. Massachusetts Agricultural College. Extension Service. Extension Bulletin No. 36, July, 1920. 15 p.  
Tobacco Investigations Progress Report. Massachusetts Agricultural Experiment Station. Bulletin No. 195, March, 1920. 38 p.
- CHENOWETH, WALTER W. Professor of Horticultural Manufactures.  
O Sweet, Sweet Cider! In Middlesex County Bulletin, December, 1919. p. 12.
- COLE, WILLIAM R. Assistant Extension Professor of Horticultural Manufactures.  
Home Storage. In New England Farms, Vol. 50, No. 45, Nov. 6, 1920. p. 8.  
Home Storage Room Plans. In Bristol County Farmers' Bulletin, October, 1920. p. 4.  
Old Cellar Holes may be Reconstructed. In Middlesex County Bulletin, May, 1920. p. 9.  
A Reason for Storing Apples. In Berkshire Farmers' Bulletin, May, 1920. p. 8, 9.
- COOLEY, ROY B. Assistant Extension Professor of Animal Husbandry.  
Choosing Dairy Cattle Feeds. In County Farm Bureau Bulletins, March and May, 1920.  
Food Advisory Report. In County Farm Bureau Bulletins, April, 1920.  
Pure Bred Sires Gaining. In County Farm Bureau Bulletins, May and June, 1920.  
Why Balanced Rations? In County Farm Bureau Bulletins, July and August, 1920.  
Wintering Brood Sows. In County Farm Bureau Bulletins, December, 1919.
- CRAMPTON, GUY C. Professor of Insect Morphology.  
Some Anatomical Details of the Remarkable Winged Zorapteron, *Zorotypus Hubbardi* Caudell, with the Notes on its Relationships. Proc. Ent. Soc., Washington, Vol. 22, No. 5, 1920. p. 98-106.  
Remarks on the Basic Plan of the Terminal Abdominal Structures of the Males of Winged Insects. Canadian Entomologist, Vol. 52, No. 8, 1920. p. 178-183.  
The Terminal Abdominal Structures of the Primitive Australian Termite, *Mastotermes Darwinensis* Froggatt. Trans. Ent. Soc., London, 1920. p. 137-145.  
Remarks on Dr. MacGillivray's Paper entitled "The Eyes of Insects." Entomological News, Vol. 31, 1920. p. 153-155.  
A Comparison of the External Anatomy of the Lower Lepidoptera and Trichoptera from the Standpoint of Phylogeny. Psyche, Vol. 27, 1920. p. 23-34.  
A Comparison of the Genitalia of Male Hymenoptera, Mecoptera, Neuroptera, Diptera, Trichoptera, Lepidoptera, Homoptera and Strepsiptera, with those of lower insects. Psyche, Vol. 27, 1920. p. 34-46.
- DACY, ARTHUR L. Professor of Vegetable Gardening.  
Asparagus Growing in Massachusetts. In Massachusetts Agricultural College. Extension Service. Extension Bulletin No. 35, May, 1920. 10 p.



FARLEY, GEORGE L. Supervisor of Junior Extension Work.

Corn Club Primer, by Earl Jones, G. L. Farley and W. F. Howe. Massachusetts Agricultural College. Extension service. Junior Extension Series No. 9, April, 1920. 4 p.  
Junior Extension Account Books. Corn Club, Potato Club, and Garden Club. Massachusetts Agricultural College. Extension Service. Junior Extension Series No. 8, April, 1920. 3 vols.

Junior Extension Work. Massachusetts Agricultural College. Extension Service. Junior Extension Series No. 11, April, 1920. 7 p.

Potato Club Primer, by Earl Jones, G. L. Farley and W. F. Howe. Massachusetts Agricultural College. Extension Service. Junior Extension Series No. 10, April, 1920. 4 p.

FERNALD, HENRY T. Professor of Entomology.

Asparagus Insects. In Massachusetts Agricultural College. Extension Service. Extension Bulletin No. 35, May, 1920. p. 11, 12.

The European Corn Borer. In Nebraska Farmer, Vol. 62, No. 15, 1920. p. 1065.

Ten Years of the Oriental Moth. Journal of Economic Entomology, Vol. 13, No. 2, April, 1920. p. 210-212.

FRANKLIN, HENRY J. In Charge of Cranberry Investigations.

Cape Cod Cranberry Frosts. In United States Department of Agriculture. Monthly Weather Review, Supplement No. 16. p. 20-30.

GOODALE, HUBERT D. Research Professor of Poultry Husbandry.

Data concerning the Inheritance of Broodiness in the Rhode Island Red Breed of Domestic Fowl. Massachusetts Agricultural Experiment Station, Bulletin No. 199, November, 1920.

HASLETT, HENRY E. Specialist in Sheep Husbandry.

Care of Ewes during Fall and Winter. In County Farm Bureau Bulletins, December, 1919, and January, 1920.

Harvest Time for the Shepherd. In Berkshire Farmers' Bulletin, April, 1920. p. 1-4.  
More Money in Docked and Castrated Lambs. In Berkshire Farmers' Bulletin, May, 1920. p. 11, 12.

HOWE, WILLIAM F. Assistant Supervisor in Junior Extension Work.

Corn Club Primer, by Earl Jones, G. L. Farley and W. F. Howe. Massachusetts Agricultural College. Extension Service. Junior Extension Series No. 9, April, 1920. 4 p.

Garden Primer, Massachusetts Boys' and Girls' Clubs. Massachusetts Agricultural College. Extension Service. Junior Extension Series No. 7, April, 1920. 15 p.

Potato Club Primer, by Earl Jones, G. L. Farley and W. F. Howe. Massachusetts Agricultural College. Extension Service. Junior Extension Series No. 10, April, 1920. 4 p.

JONES, EARL. Extension Professor of Agronomy.

Alfalfa and Soy Beans gain by its Use. In Hampshire County Farm Bureau Monthly, April, 1920. p. 5.

Corn Club Primer, by Earl Jones, G. L. Farley and W. F. Howe. Massachusetts Agricultural College. Extension Service. Junior Extension Series No. 9, April, 1920. 4 p.

Good Seed Corn. In Berkshire Farmers' Bulletin, September, 1920. p. 10.

Making Bordeaux Mixture. In County Farm Bureau Bulletins, July, 1920.

Plant Sweet Corn as Usual. In Berkshire Farmers' Bulletins, May, 1920. p. 10.

Potato Club Primer, by Earl Jones, G. L. Farley and W. F. Howe. Massachusetts Agricultural College. Extension Service. Junior Extension Series No. 10, April, 1920. 4 p.

Seed Corn Testing Low. In County Farm Bureau Bulletins, April, 1920.

Soil and Glue Method of Inoculating Legume Seed. In County Farm Bureau Bulletins, May and April, 1920.

Soy Beans for Silage. In Middlesex County Bulletin for May, 1920. p. 7.

Spraying Potatoes with Bordeaux will increase the Yield. In Bristol County Farmers' Bulletin, June, 1920. p. 2.

Weather prevents Drying. In Middlesex County Bulletin, December, 1919. p. 5.

What is the Analysis of the Fertilizers you are Buying? In County Farm Bureau Bulletins, March, 1920.

LINDSEY, JOSEPH B. Professor of Agricultural Chemistry.

The Nutritive Value of Cattle Feeds. I. Velvet Bean Feed for Farm Stock. Massachusetts Agricultural Experiment Station. Bulletin No. 197, September, 1920. p. 61-74.

The Nutritive Value of Cattle Feeds. II. Oat Feed for Farm Stock. Massachusetts Agricultural Experiment Station. Bulletin No. 200, November, 1920.

Semi-solid Buttermilk. In Berkshire Farmers' Bulletin, February, 1920. p. 9, 10.

LYONS, LOUIS M. Editor of Extension Publications.

M. A. C. at Eastern States Exposition. In New England Farms, Vol. 3, No. 41, Oct. 9, 1920. p. 3.

M. A. C. opens. In New England Farms, Vol. 3, No. 42, Oct. 16, 1920. p. 2, 3.

MONAHAN, WILLIAM C. Extension Professor of Poultry Husbandry.

Breeding for Egg Production. In County Farm Bureau Bulletins, February, 1920.

Brooding Sanitation. In County Farm Bureau Bulletins, March, 1920.

Feeding Chicks. In Berkshire Farmers' Bulletin, April, 1920. p. 8, 9.

Lice, Mites and their Control. In County Farm Bureau Bulletins, July, 1920.

Poultry Feeding. Massachusetts Agricultural College. Extension Service. Extension Bulletin No. 33, December, 1919. 8 p.

Poultry Feeding. Massachusetts Agricultural College. Extension Service. Extension Bulletin No. 33 (2d ed.), July, 1920. 8 p.

Poultry Pointers. In Hampshire County Farm Bureau Monthly, May, 1920. p. 5-7.

Poultry Suggestions. In Bristol County Farmers' Bulletin, March, 1920. p. 4.

Round Worms in Poultry. In County Farm Bureau Bulletins, October, 1920.

MORSE, FRED W. Research Professor of Chemistry.

A Fertilizer Experiment with Asparagus. Massachusetts Agricultural Experiment Station. Bulletin No. 194, December, 1919. p. 231-257.

Studies of Cranberries during Storage. Massachusetts Agricultural Experiment Station. Bulletin No. 198, September, 1920.

NODINE, EARLE H. Extension Instructor in Charge of Poultry Club Work.

Brooding Methods are Very Important. In Middlesex County Bulletin, April, 1920. p. 13.

Many will want to Hatch "Chicks." In Middlesex County Bulletin, March, 1920. p. 12.

Overfeeding causes Loss of Many Chicks. In Middlesex County Bulletin, May, 1920. p. 13.

Primer of Instruction. Massachusetts Boys' and Girls' Poultry Clubs. Massachusetts Agricultural College. Extension Service. Boys' and Girls' Series, No. 11, May, 1920. 9 p.

NORRIS, HELEN M. Extension Instructor in Agricultural Education.

Every Girl should try to Look Nice. In Middlesex County Bulletin, March, 1920. p. 13.

Massachusetts Junior Extension Canning Club Bulletin. Massachusetts Agricultural College. Extension Service. Junior Extension Series No. 12, June, 1920. 14 p.

RAND, FRANK P. Instructor in English.

Editorials in The Signet, December, 1919, March, June and September, 1920. The Golden Rule and College Fraternities. In Banta's Greek Exchange, Vol. 8, No. 3, July, 1920. p. 311-314.

REGAN, W. S. Assistant Professor of Entomology.

Progress in the Use of Chemicals for Destroying Rives. In American Plant Pest Commission Report, 1920.

SEARS, FRED C. Professor of Pomology.

Grape Growing in Massachusetts. Massachusetts Agricultural College. Extension Service. Extension Bulletin No. 32, February, 1920. 25 p.

Productive Small Fruit Culture. Philadelphia. Lippincott, 1920. 368 p.

Spraying the Apple Orchards. Massachusetts Agricultural College. Extension Service. Extension Bulletin No. 34, May, 1920. 8 p.

SIMS, NEWELL L. Professor of Rural Sociology.

The Rural Community, Ancient and Modern. New York. Scribner, 1920. 916 p.

Rural Socialization. In Political Science Quarterly, Vol. 35, No. 1, March, 1920.

SMITH, PHILIP H. Chemist in Charge of Feed and Dairy Section.

Inspection of Commercial Feed Stuffs, 1920. Massachusetts Agricultural Experiment Station. Control Series No. 13, November, 1920.

STRAHAN, JAMES L. Assistant Professor of Rural Engineering.

Framing of Large Barns. In Builders' Journal, October, 1920.

TOMPSON, HAROLD F. Professor of Vegetable Gardening.

New England Notes in Market Growers' Journal, December, 1919-November, 1920.

Functions of its Work are Three in Number. In Middlesex County Bulletin, April, 1920. p. 10.

The Home Vegetable Garden. In County Farm Bureau Bulletins, May and June, 1920.

Market Garden Notes. In Berkshire Farmers' Bulletin, May and June, 1920.

Market Gardeners' Field Trip. In Bristol County Farmers' Bulletin, June, 1920. p. 4.

Seed Buying and Seed Testing. In County Farm Bureau Bulletins, February and March, 1920.

VAN METER, RALPH A. Assistant Extension Professor of Pomology.

Care of Bridge-grafted Trees. In County Farm Bureau Bulletins, June and October, 1920.

Many Orchards need Fertilization. In Berkshire Farmers' Bulletin, June, 1920. p. 5.

Protect Fruit Trees from Mice. In Bristol County Farmers' Bulletin, October, 1920. p. 4.

Spray Your Apple Trees. In Berkshire Farmers' Bulletin, April, 1920. p. 6, 7.

WAUGH, FRANK A. Professor of Landscape Gardening.

Apple Butter. In *Country Gentleman*, Vol. 84, No. 47, Dec. 6, 1919, p. 67.

The Game. In *Country Gentleman*, Vol. 85, No. 42, Oct. 16, 1920. p. 32.

Going! Going! Almost gone! In *Country Gentleman*, Vol. 85, No. 18, May 1, 1920. p. 6, 54.

How Many Apple Trees? In *Country Gentleman*, Vol. 85, No. 27, July 3, 1920. p. 12, 34.

Occupational Therapy in Tuberculosis. Typewritten volume, 1919, photos. 41 p.

Occupational Therapy in Tuberculosis. In *Scientific Monthly*, Vol. 10, No. 5, May, 1920. p. 438-456.

The Opportunities of the Country Village. In *House Beautiful*, Vol. 48, No. 4, October, 1920. p. 276, 277, 312.

Recreational Forestry. In *The Playground*, Vol. 14, No. 4, July, 1920. p. 219-225.

A Restudy of Plans for the College Grounds and for the Location of Buildings. 1920. 37 p.

Seven Mountains of Massachusetts. In *Springfield Republican*, Feb. 1, 1920.

A Side Line of Fruit: How You can make it Pay on Your Farm. In *Farm and Fireside*, Vol. 44, No. 1, January, 1920. p. 17, 56.

Those Dear Old Whims. In *Country Gentleman*, Vol. 85, No. 20, May 15, 1920. p. 13, 58.

The Tree Planter's Problem. In *Country Gentleman*, Vol. 85, No. 16, April 17, 1920. p. 6, 58.

Useful Landscape Gardening on the Farm. In *Farmers' Advocate*, Vol. 54, December, 1919. p. 2218.

What We do in the Country — Music. In *Country Gentleman*, Vol. 84, No. 50, Dec. 13, 1919. p. 15, 32.

Where shall We Ride To-day? In *Springfield Republican*, April 18, 1920.

## REPORT OF THE TREASURER

FOR THE FISCAL YEAR ENDING NOV. 30, 1920.

## BALANCE SHEET.

	DR.	CR.
<b>1919</b>		
Dec. 1. To balance on hand, . . . . .	\$30,442 21	
<b>1920</b>		
Nov. 30. To departmental income, . . . . .	151,201 82	
Nov. 30. To receipts from State Treasurer, . . . . .	772,665 70	
Nov. 30. To November, 1919, schedule, . . . . .	66,413 37	
Nov. 30. To refunds to State Treasurer, . . . . .	32 60	
Nov. 30. To receipts from United States Treasurer, . . . . .	122,541 26	
Nov. 30. To September and October schedule in transit, . . . . .	16,990 50	
Nov. 30. To November schedule in transit, . . . . .	99,195 06	
Nov. 30. Expenditures of November, 1919, schedule paid in this fiscal year, . . . . .		\$66,413 37
Nov. 30. Refunds transferred to State Treasurer, . . . . .		32 60
Nov. 30. Expenditure for fiscal year, . . . . .		1,004,514 74
Nov. 30. Income transferred to State Treasurer, . . . . .		151,201 82
Nov. 30. Balance on hand, . . . . .		37,319 99
	\$1,259,482 52	\$1,259,482 52

## STATEMENT OF LEGISLATIVE APPORTIONMENT AND EXPENDITURES FOR FISCAL YEAR ENDING NOV. 30, 1920, AND APPORTIONMENT REQUESTED FOR 1921.

	Apportionment for Last Fiscal Year.	Expenditures.	Requested Apportionment for New Fiscal Year.
<b>College:—</b>			
Personal services, . . . . .	\$305,361 21	\$298,075 47	\$426,437 00
Maintenance, . . . . .	209,270 16	229,072 09	269,430 00
	\$514,631 37	\$527,147 56	\$695,867 00
<b>Experiment Station:—</b>			
Personal services, . . . . .	\$41,000 00	\$43,060 36	\$111,481 00
Maintenance, . . . . .	15,816 69	17,303 71	25,280 00
	56,816 69	60,364 07	136,761 00
<b>Extension Service:—</b>			
Personal services, . . . . .	\$54,005 60	\$48,371 91	\$121,530 00
Maintenance, . . . . .	40,976 28	36,416 55	67,200 00
	94,981 88	84,788 46	188,730 00
<b>Short Courses:—</b>			
Personal services, . . . . .	\$25,600 00	\$27,306 65	\$45,133 00
Maintenance, . . . . .	14,056 45	7,940 56	20,275 00
	39,656 45	35,247 21	65,408 00
<b>Market-Garden and Field Station:—</b>			
Personal services, . . . . .	\$5,400 00	\$5,277 29	\$6,000 00
Maintenance, . . . . .	3,050 12	2,680 21	3,000 00
	8,450 12	7,957 50	9,000 00
<b>Totals, . . . . .</b>	<b>\$714,536 51</b>	<b>\$715,504 80</b>	<b>\$1,095,766 00</b>



STATEMENT OF LEGISLATIVE APPORTIONMENT AND EXPENDITURES FOR  
FISCAL YEAR ENDING NOV. 30, 1920, AND APPORTIONMENT RE-  
QUESTED FOR 1921 — *Concluded.*

	Apportionment for Last Fiscal Year.	Expenditures.	Requested Apportionment for New Fiscal Year.
Trustees, travel, . . .	\$1,334 86	\$798 39	\$1,200 00
Printing reports, . . .	5,500 00	1,641 27	5,500 00
Commercial feedstuffs, . .	6,017 00	5,767 91	8,000 00
Totals, . . .	\$727,388 37	\$723,712 37	\$1,110,466 00
Fertilizer law, . . .	12,583 93	12,410 84	14,500 00
Poultry disease law, . . .	3,263 28	3,064 98	6,000 00
Milk testing law, . . .	550 00	525 08	600 00
Totals, . . .	\$743,785 58	\$739,713 27	\$1,131,566 00
Balance unexpended, . . .	—	4,072 31	—
	—	\$743,785 58	—

CASH STATEMENT.

	Other Funds.	State Funds.	Totals.
Balance Dec. 1, 1919, . . . . .	\$30,442 21	—	\$30,442 21
<i>Receipts.</i>			
College receipts from students and others, . . . . .	—	—	\$15,055 63
Tuition, . . . . .	—	\$3,045 00	
Laboratory fees, . . . . .	—	6,435 13	
Rents, . . . . .	—	5,575 50	
Department sales, . . . . .	—	—	101,491 12
Produce, . . . . .	—	97,292 03	
Miscellaneous, . . . . .	—	4,199 09	
Experiment Station, . . . . .	—	—	8,044 81
Cranberry receipts, . . . . .	—	3,912 35	
Chemical receipts, . . . . .	—	2,425 11	
Miscellaneous, . . . . .	—	1,707 35	
Extension Service, . . . . .	—	—	2,537 39
Correspondence Courses, . . . . .	—	643 00	
Miscellaneous, . . . . .	—	1,894 39	
Short Courses, . . . . .	—	—	4,810 25
Students' fees, . . . . .	—	4,353 50	
Summer School, . . . . .	—	31 75	
Winter School, . . . . .	—	425 00	
Market-Garden Field Station, . . . . .	—	—	2,286 34
Produce, . . . . .	—	2,286 34	
Fertilizer law, . . . . .	—	14,798 17	14,798 17
Milk testing law, . . . . .	—	709 93	709 93
Poultry disease law, . . . . .	—	1,468 18	1,468 18
Treasurer of the Commonwealth, . . . . .	—	—	772,665 70
Maintenance, . . . . .	—	628,031 46	
Special appropriations, . . . . .	—	141,320 92	
Endowment, . . . . .	\$3,313 32	—	

CASH STATEMENT — *Concluded.*

	Other Funds.	State Funds.	Totals.
<i>Receipts — Concluded.</i>			
Federal government, . . . . .			\$122,541 26
Land grant of 1862, . . . . .	\$7,300 00	—	
Hatch fund of 1887, . . . . .	15,000 00	—	
Morrill fund of 1890, . . . . .	16,666 67	—	
Adams fund of 1906, . . . . .	15,000 00	—	
Nelson fund of 1907, . . . . .	16,666 66	—	
Smith-Lever fund of 1914, . . . . .	31,247 93	—	
Short Course, unit, . . . . .	8,160 00	—	
Short Course, two years, . . . . .	12,500 00	—	
November, September and October schedules in transit.	—	\$116,185 56	116,185 56
	\$156,296 79	\$1,036,739 76	\$1,193,036 55
<i>Payments.</i>			
College expenses, . . . . .			\$567,240 59
Personal services, . . . . .	\$40,055 13	\$298,075 47	
Maintenance, . . . . .	37 90	229,072 09	
Experiment Station, . . . . .			90,340 53
Personal services, . . . . .	29,760 24	43,060 36	
Maintenance, . . . . .	216 22	17,303 71	
Extension Services, . . . . .			113,811 81
Personal services, . . . . .	26,531 51	48,371 91	
Maintenance, . . . . .	2,491 84	36,416 55	
Short Courses, . . . . .			55,131 17
Personal services, . . . . .	15,979 84	27,306 65	
Maintenance, . . . . .	3,904 12	7,940 56	
Market-Garden Field Station, . . . . .			7,957 50
Personal services, . . . . .	—	5,277 29	
Maintenance, . . . . .	—	2,680 21	
Trustees, travels, . . . . .	—	798 39	798 39
Printing reports, . . . . .	—	1,641 27	1,641 27
Commercial feedstuffs, . . . . .	—	5,767 91	5,767 91
Fertilizer law, . . . . .	—	12,410 84	12,410 84
Poultry disease law, . . . . .	—	3,064 98	3,064 98
Milk testing law, . . . . .	—	525 08	525 08
Special appropriations, . . . . .			145,824 67
1917, improvements power plant, . . . . .	—	32 25	
1918, Market-Garden Field Station, . . . . .	—	3,426 61	
1918, dining hall, . . . . .	—	312 40	
1919, improvements and equipments, . . . . .	—	9,541 74	
1919, women's dormitory, . . . . .	—	100,219 74	
1919, Market-Garden Field Station, . . . . .	—	5,056 22	
1919, Engineering survey, . . . . .	—	1,104 91	
1920, Improvements and equipments, . . . . .	—	24,847 41	
1920, Cavalry barn, . . . . .	—	1,283 39	
Income, . . . . .	—	151,201 82	151,201 82
Balance, . . . . .	37,319 99	—	37,319 99
	\$156,296 79	\$1,036,739 76	\$1,193,036 55

## CLASSIFICATION OF INCOME FROM STUDENTS AND OTHERS.

	Laboratory Department Fees.	Sales.	Rent.	Miscellaneous.	Tuition.	Totals.
Agronomy, . . . .	\$212 50	-	-	\$0 45	-	\$212 95
Animal husbandry, .	342 00	-	-	-	-	342 00
Beekeeping, . . . .	-	\$145 85	-	-	-	145 85
Botany, . . . . .	497 00	-	-	-	-	497 00
Chemistry, . . . .	2,491 39	8 30	-	-	-	2,499 69
Dairying, . . . . .	321 00	29,484 99	-	-	-	29,805 99
Entomology, . . . .	113 00	-	\$18 00	-	-	131 00
Farm, . . . . .	-	41,367 75	-	232 06	-	41,599 81
Farm management, .	172 50	-	-	-	-	172 50
Floriculture, . . .	131 50	5,399 30	-	-	-	5,530 80
Forestry, . . . . .	12 00	-	-	-	-	12 00
General horticulture, .	-	-	-	843 26	-	843 26
Grounds, . . . . .	-	-	-	22 30	-	22 30
Horticultural manufactures.	-	601 15	-	-	-	601 15
Hospital, . . . . .	-	-	-	758 92	-	758 92
Landscape gardening, .	386 00	-	-	-	-	386 00
Language and literature.	202 00	-	-	-	-	202 00
Library, . . . . .	-	31 94	-	3 00	-	34 94
Market gardening, .	59 50	3,036 75	-	-	-	3,096 25
Mathematics, . . . .	84 00	-	-	-	-	84 00
Microbiology, . . . .	282 88	-	-	257 50	-	540 38
Military, . . . . .	-	-	-	12 28	-	12 28
Mount Toby, . . . .	-	585 11	-	-	-	585 11
Physics, . . . . .	90 00	-	-	3 85	-	93 85
Pomology, . . . . .	92 00	3,911 45	-	-	-	4,003 45
Poultry husbandry, .	56 00	9,299 08	-	-	-	9,355 08
Rural engineering, . .	262 50	-	-	-	-	262 50
Veterinary, . . . . .	24 00	-	-	1 28	-	25 28
Zoölogy and geology, .	385 00	-	-	-	-	385 00
Operating and maintenance.	-	-	-	3,549 98	\$3,045 00	6,594 98
General expense (cash credits).	-	-	-	1,453 61	-	1,453 61
Adams Hall, . . . .	-	-	672 00	-	-	672 00
Draper Hall, . . . .	-	-	1,221 50	-	-	1,221 50
North dormitory, . .	-	-	2,181 50	-	-	2,181 50
South dormitory, . .	-	-	1,520 00	-	-	1,520 00

CLASSIFICATION OF INCOME FROM STUDENTS AND OTHERS — *Concluded.*

	Laboratory Department Fees.	Sales.	Rent.	Miscellaneous.	Tuition.	Totals.
College residences, .	-	-	\$571 56	-	-	\$571 56
President's office, .	-	-	-	\$25 29	-	25 29
Registrar's office, .	-	-	-	15	-	15
Treasurer's office, .	-	-	-	76 08	-	76 08
Totals, . . . .	\$6,216 77	\$93,871 67	\$6,184 56	\$7,240 01	\$3,045 00	\$116,558 01
Less refunds, . .	-	8 26	-	3 00	-	11 26
Totals, . . . .	\$6,216 77	\$93,863 41	\$6,184 56	\$7,237 01	\$3,045 00	\$116,546 75



## ANALYSIS OF COLLEGE EXPENDITURES.

ADMINISTRATION.	Office Expense.	Salaries and Labor.	Travel.	Minor Equip- ment.	Building Supplies.	Publicity and Lectures.	Student Activities.	Com- mence- ment.	Miscel- laneous.	Totals.
Dean's office, . . . . .	\$341 14	\$258 63	-	\$3 68	-	-	-	-	-	\$603 45
Executive order, . . . . .	-	-	\$2,458 96	-	-	\$2,833 66	\$228 26	\$1,060 47	\$4,260 27	10,841 62
President's office, . . . . .	1,928 72	122 63	205 90	29 16	\$11 95	-	-	-	25 64	2,324 00
Registrar's office, . . . . .	647 60	75 90	70 20	4 13	-	-	-	-	-	797 83
Treasurer's office, . . . . .	900 32	614 39	179 04	125 73	54 77	-	-	-	69 41	1,943 66
Administration (salaries), . . . . .	-	38,082 71	-	-	-	-	-	-	-	38,082 71
Totals, . . . . .	\$3,817 78	\$39,154 26	\$2,914 10	\$162 70	\$66 72	\$2,833 66	\$228 26	\$1,060 47	\$4,355 32	\$54,593 27

MAINTENANCE.	Office Expense.	Labor.	Laboratory Supplies.	Minor Equip- ment.	Building Supplies.	Travel.	General Expense.	Miscel- laneous.	Salaries.	Totals.
Academic maintenance: —										
Agricultural economics, . . . . .	\$181 86	\$95 82	\$35 03	\$65 11	\$6 33	\$124 48	-	-	-	\$508 63
Agricultural education, . . . . .	204 97	-	41 53	57 33	-	76 74	-	\$81 09	-	461 66
Agronomy, . . . . .	192 56	261 00	418 78	155 29	-	125 11	-	-	-	1,152 74
Animal husbandry, . . . . .	254 72	180 10	28 02	26 87	-	211 32	-	-	-	701 03
Beekeeping, . . . . .	-	473 60	2 65	3 59	2 73	-	-	-	-	482 57
Botany, . . . . .	212 65	663 86	620 68	3 00	95 16	21 67	-	-	-	1,617 02

ANALYSIS OF COLLEGE EXPENDITURES — *Concluded.*

MAINTENANCE.	Office Expense.	Labor.	Laboratory Supplies.	Minor Equip- ment.	Building Supplies.	Travel.	General Expense.	Miscel- laneous.	Salaries.	Totals.
Chemistry, . . . . .	\$131 46	\$1,031 59	\$3,735 65	\$46 51	\$76 71	\$8 90	-	-	-	\$5,030 82
Dairying, . . . . .	293 75	4,681 48	33,319 80	413 61	391 68	63 90	-	\$0 52	-	39,164 74
Domestic science, . . . . .	477 70	240 83	741 63	56 64	12 30	293 85	-	-	-	1,822 95
Economics and sociology, . . . . .	26 97	14 75	-	-	10 81	-	-	18 90	-	71 43
Entomology, . . . . .	104 54	301 85	54 66	45 60	98 49	-	-	-	-	605 14
Farm management, . . . . .	176 34	124 73	86 01	88 28	-	113 40	-	-	-	588 76
Floriculture, . . . . .	79 76	5,801 98	999 88	91 61	29 04	15 28	-	7 00	-	7,024 55
Forestry, . . . . .	25 99	81 00	7 40	11 34	4 98	33 33	-	1 04	-	165 08
General agriculture, . . . . .	-	1,844 14	-	223 76	258 41	-	-	71 77	-	2,398 08
Horticultural manufactures, . . . . .	79 86	1,240 73	1,805 91	148 94	-	25 92	-	10 00	-	3,311 36
Hospital, . . . . .	-	1,760 82	-	20 60	-	-	\$1,339 86	-	-	3,121 28
Landscape gardening, . . . . .	62 84	4 80	347 91	-	-	25 09	-	38 78	-	479 42
Language and literature, . . . . .	10 08	80 39	80 11	124 80	-	30 28	-	30 00	-	355 66
Market gardening, . . . . .	156 00	4,203 03	1,296 87	35 71	36 47	255 14	-	35 00	-	6,018 22
Mathematics, . . . . .	73 75	105 27	6 43	1 73	13 18	-	-	-	-	200 36
Microbiology, . . . . .	96 04	595 77	594 37	121 96	40 13	-	-	-	-	1,448 27
Military science, . . . . .	173 44	446 95	43	411 05	100 84	-	124 24	39 88	-	1,296 83
Mount Toby, . . . . .	-	327 91	-	9 83	-	13 04	-	42 70	-	393 48
Physical education, . . . . .	113 60	490 39	164 24	-	30 08	327 41	-	-	-	1,125 72
Physics, . . . . .	9 80	369 10	246 03	24 25	12 43	-	-	-	-	661 61
Pomology, . . . . .	281 54	4,858 07	685 91	66 43	-	44 93	-	5 00	-	5,941 88

[illegible]

## CURRENT ACCOUNTS, 1920.

*Disbursements and Receipts.*

ACCOUNTS.	Disbursements from Nov. 30, 1919, to Nov. 30, 1920.	Receipts from Nov. 30, 1919, to Nov. 30, 1920.	Apportionment for Year ending Nov. 30, 1920.	Balance to Credit.
Administration:—				
Dean's office, . . . . .	\$603 45	—	\$600 00	—\$3 45
Executive order, . . . . .	10,841 62	—	10,675 00	—166 62
President's office, . . . . .	2,324 00	\$25 29	1,600 00	—724 00
Registrar's office, . . . . .	797 83	15	600 00	—197 83
Salaries, . . . . .	38,082 71	—	38,000 00	—82 71
Treasurer's office, . . . . .	1,943 66	76 08	1,300 00	—643 66
Maintenance, academic:—				
Agricultural economics, . . . . .	508 63	—	550 00	41 37
Agricultural education, . . . . .	461 66	—	600 00	138 34
Agronomy, . . . . .	1,152 74	212 95	1,100 00	—52 74
Animal husbandry, . . . . .	701 03	342 00	700 00	—1 03
Beekeeping, . . . . .	482 57	145 85	1,185 00	702 43
Botany, . . . . .	1,617 02	497 00	1,750 00	132 98
Chemistry, . . . . .	5,030 82	2,499 69	5,200 00	169 18
Dairying, . . . . .	39,164 74	29,805 99	39,850 00	685 26
Domestic science, . . . . .	1,822 95	—	1,500 00	—322 95
Economics and sociology, . . . . .	71 43	—	50 00	—21 43
Entomology, . . . . .	605 14	131 00	815 00	209 86
Farm management, . . . . .	588 76	172 50	500 00	—88 76
Floriculture, . . . . .	7,024 55	5,530 80	7,550 00	525 45
Forestry, . . . . .	165 08	12 00	250 00	84 92
General agriculture, . . . . .	2,398 08	—	2,100 00	—298 08
Horticultural manufactures, . . . . .	3,311 36	601 15	3,000 00	—311 36
Hospital, . . . . .	3,121 28	758 92	2,000 00	—1,121 28
Landscape gardening, . . . . .	479 42	386 00	500 00	20 58
Language and literature, . . . . .	355 66	202 00	400 00	44 34
Market gardening, . . . . .	6,018 22	3,096 25	6,500 00	481 78
Mathematics, . . . . .	200 36	84 00	285 00	84 64
Microbiology, . . . . .	1,448 27	540 38	2,100 00	651 73
Military science, . . . . .	1,296 83	12 28	2,000 00	703 17
Mount Toby, . . . . .	393 48	585 11	3,000 00	2,606 52
Physical education, . . . . .	1,125 72	—	800 00	—325 72
Physics, . . . . .	661 61	93 85	720 00	58 39
Pomology, . . . . .	5,941 88	4,003 45	4,775 00	—1,166 88
Poultry husbandry, . . . . .	13,638 17	9,355 08	15,500 00	1,861 83
Rural engineering, . . . . .	639 11	262 50	600 00	—39 11
Rural sociology, . . . . .	88 35	—	125 00	36 65
Veterinary, . . . . .	1,456 27	25 28	1,300 00	—156 27
Zoology and geology, . . . . .	592 79	385 00	575 00	—17 79
Maintenance, general:—				
Farm, . . . . .	61,369 34	41,599 81	48,500 00	—12,869 34
General horticulture, . . . . .	8,742 43	843 26	10,000 00	1,257 57
Graduate school, . . . . .	51 40	—	100 00	48 60
Grounds, . . . . .	7,486 07	22 30	7,500 00	13 93
Library, . . . . .	7,700 67	34 94	6,500 00	—1,200 67
General expense, . . . . .	1,453 61	1,453 61	—	—
Operating and maintenance, . . . . .	130,943 01	12,761 54	104,000 00	—26,943 01
Endowment fund, . . . . .	7,350 53	10,613 32	10,613 32	6,655 35
Instruction:—				
Salaries, . . . . .	149,319 85	—	159,000 00	9,680 15
United States Treasurer, Morrill fund, . . . . .	16,371 24	16,666 67	16,666 67	10,088 90
United States Treasurer, Nelson fund, . . . . .	16,371 26	16,666 66	16,666 66	10,088 88
State Treasurer, account of schedules, . . . . .	—	527,147 56*	—	—
Income to State Treasurer, . . . . .	116,546 75	—	—	—
	\$680,863 41	\$687,652 22	\$540,201 65	\$318 11
*Less amount transferred from Experiment Station, . . . . .	—	2,935 19*	—	—
Less refunds, . . . . .	\$680,863 41	\$684,717 03	—	—
	11 26	11 26	—	—
Balance beginning fiscal year Dec. 1, 1919, . . . . .	\$680,852 15	\$684,705 77	—	—
Balance on hand Nov. 30, 1920, . . . . .	—	22,979 51	—	—
	26,833 13	—	—	—
	\$707,685 28	\$707,685 28	—	—



## COLLEGE ACCOUNTS.

*Comparative Disbursements and Receipts for 1919-20.*

ACCOUNTS.	DISBURSEMENTS.		RECEIPTS.	
	1919.	1920.	1919.	1920.
Agricultural economics, . . . . .	\$377 98	\$508 63	\$1 22	-
Agricultural education, . . . . .	264 25	461 66	10	-
Agronomy, . . . . .	947 94	1,152 74	252 00	\$212 95
Animal husbandry, . . . . .	742 75	701 03	294 20	342 00
Beekeeping, . . . . .	-	482 57	-	145 85
Botany, . . . . .	1,482 78	1,617 02	627 76	497 00
Chemistry, . . . . .	4,636 62	5,030 82	2,669 42	2,499 69
Dairying, . . . . .	33,550 70	39,164 74	33,301 94	29,805 99
Dean's office, . . . . .	522 50	603 45	55	-
Domestic science, . . . . .	2,397 27	1,822 95	68	-
Economics and sociology, . . . . .	65 78	71 43	-	-
Entomology, . . . . .	943 87	605 14	1,082 50	131 00
Executive order, . . . . .	7,085 23	10,841 62	-	-
Farm, . . . . .	50,997 36	61,369 34	44,238 47	41,599 81
Farm management, . . . . .	358 32	588 76	195 60	172 50
Floriculture, . . . . .	7,468 40	7,024 55	4,549 99	5,530 80
Forestry, . . . . .	337 79	165 08	9 00	12 00
Freshman agriculture, . . . . .	188 60	-	219 00	-
General agriculture, . . . . .	2,001 15	2,398 08	4 15	-
Graduate school, . . . . .	60 26	51 40	-	-
General horticulture, . . . . .	9,117 97	8,742 43	2,248 26	342 26
Grounds, . . . . .	5,731 00	7,486 07	107 13	22 30
Horticultural manufactures, . . . . .	3,429 13	3,311 36	641 03	601 15
Hospitals, . . . . .	2,212 25	3,121 28	792 48	758 92
Landscape gardening, . . . . .	169 44	479 42	248 24	386 00
Language and literature, . . . . .	210 06	355 66	170 00	202 00
Library, . . . . .	6,919 64	7,700 67	59 34	34 94
Market gardening, . . . . .	7,892 42	6,018 22	4,804 51	3,096 25
Mathematics, . . . . .	220 86	200 36	232 81	84 00
Military, . . . . .	1,387 77	1,296 83	-	12 28
Microbiology, . . . . .	1,825 90	1,448 27	704 60	540 38
Mount Toby, . . . . .	3,372 34	393 48	5,872 15	585 11
Physical education, . . . . .	841 27	1,125 72	-	-
Physics, . . . . .	722 24	661 61	40 05	93 85
Pomology, . . . . .	4,550 18	5,941 88	3,738 61	4,003 45
Poultry husbandry, . . . . .	16,248 47	13,638 17	15,895 74	9,355 08
President's office, . . . . .	1,971 58	2,324 00	3 50	25 29
Registrar's office, . . . . .	600 58	797 83	25	15
Rural engineering, . . . . .	742 47	639 11	214 14	262 50
Rural sociology, . . . . .	174 96	88 35	-	-
Salaries, . . . . .	153,261 35	187,402 56	-	-
Treasurer's office, . . . . .	1,540 22	1,943 66	64 55	76 08
Veterinary science, . . . . .	895 21	1,456 27	6 00	25 28
War emergency, . . . . .	102 62	-	844 62	-
Zoology and geology, . . . . .	655 34	592 79	516 13	385 00
General expense, . . . . .	31,350 07	1,453 61	31,350 07	1,453 61
Operating and maintenance, . . . . .	98,123 29	130,948 01	13,527 63	12,761 54
State Treasurer:—				
Endowment fund, . . . . .	7,220 76	7,350 53	10,613 32	10,613 32
Graduate school, . . . . .	-	-	-	-
Maintenance, . . . . .	-	-	-	-
Instruction, . . . . .	-	-	-	-
Administration, . . . . .	-	-	-	-
United States Treasurer:—				
Morrill fund, . . . . .	16,777 42	16,371 24	16,848 67	16,666 67
Nelson fund, . . . . .	16,777 40	16,371 26	16,848 66	16,666 66
State Treasurer account of schedules, . . . . .	-	-	427,244 04	527,147 56
Income to State Treasurer, . . . . .	128,673 20	116,546 75	-	-
	\$638,146 96	\$680,863 41	\$641,083 11	\$687,652 22
Less journal entries and refunds, . . . . .	41,454 14	11 26	40,855 22	11 26
	\$596,692 82	\$680,852 15	\$600,227 89	\$687,640 96
Less amount transferred from Experiment Station, . . . . .	-	-	-	2,935 19
	\$596,692 82	\$680,852 15	\$600,227 89	\$684,705 77
Balance beginning of fiscal year, . . . . .	-	-	19,444 44	22,979 51
Balance on hand at close of fiscal year, . . . . .	22,979 51	26,833 13	-	-
	\$619,672 33	\$707,685 28	\$619,672 33	\$707,685 28

COLLEGE ACCOUNTS — *Concluded.**Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1919, . . . . .	—	\$22,979 51
Institution receipts Nov. 30, 1920, . . . . .	—	116,546 75
State Treasurer's receipts Nov. 30, 1920, . . . . .	—	524,212 37 <sup>1</sup>
United States Treasurer's receipts Nov. 30, 1920, . . . . .	—	33,333 33
State Treasurer, endowment fund, . . . . .	—	10,613 32
Total disbursements, . . . . .	\$564,305 40	—
Receipts turned in to State Treasurer, . . . . .	116,546 75	—
	\$680,852 15	\$707,685 28
Bills receivable Dec. 1, 1919, deducted, . . . . .	—	8,206 00
Bills payable Dec. 1, 1919, deducted, . . . . .	7,179 90	—
	\$673,672 25	\$699,479 28
Bills receivable Nov. 30, 1920, . . . . .	—	8,773 84
Bills payable Nov. 30, 1920, . . . . .	1,785 17	—
Balance, . . . . .	32,755 70	—
	\$708,213 12	\$708,213 12

<sup>1</sup> Less amount transferred from Experiment Station, \$2,935.19.

## FARM DISBURSEMENTS.

	Labor.	Equip- ment.	Feed.	Supplies.	Sundry.	Bedding.	Fertilizer.	Seeds.	Improve- ments.	Totals.
Dairy cattle,	\$10,352 47	\$1,415 06	\$2,890 94	\$3,108 62	\$916 01	-	-	-	-	\$18,683 10
Sheep,	1,405 81	239 21	-	7 80	201 73	-	-	-	-	1,864 55
Horses,	1,599 46	117 89	11 30	48 79	309 57	-	-	-	-	2,087 01
Live stock,	419 36	-	16,383 66	-	-	\$1,941 88	-	-	-	18,744 90
Swine,	1,238 09	91 13	1,838 39	5 90	68 17	-	-	-	-	3,241 68
Field crops,	6,167 22	-	1,838 39	46 73	-	-	\$1,224 73	\$489 47	-	7,928 15
Tools and machinery,	501 06	1,090 81	-	492 53	-	-	-	-	-	2,084 40
Miscellaneous,	3,962 40	-	-	293 03	112 85	-	-	-	\$2,367 27	6,735 55
Totals,	\$25,645 87	\$2,954 10	\$21,124 29	\$4,013 40	\$1,608 33	\$1,941 88	\$1,224 73	\$489 47	\$2,367 27	\$61,369 34

## FARM CREDITS.

	Milk.	Stock.	Sundry.	Labor.	Field Crops.	Tools and Machinery.	Improve- ments.	Totals.
Dairy cattle,	\$32,210 77	\$2,783 07	\$41 70	-	-	-	-	\$35,035 54
Horses,	-	-	35 00	\$81 41	-	-	-	116 41
Sheep,	-	185 00	152 00	-	-	-	-	337 00
Live stock,	-	-	22 00	-	-	-	-	22 00
Swine,	-	2,081 88	-	-	-	-	-	2,081 88
Field crops,	-	-	-	-	\$3,762 33	-	-	3,762 33
Tools and machinery,	-	-	-	150 65	-	\$12 00	-	12 00
Miscellaneous,	-	-	-	-	-	-	\$82 00	232 65
Totals,	\$32,210 77	\$5,049 95	\$250 70	\$232 06	\$3,762 33	\$12 00	\$82 00	\$41,599 81

## AGRICULTURAL DIVISION.

*Disbursements and Receipts.*

	Disbursements.	Receipts.
Agronomy, . . . . .	\$1,152 74	\$212 95
Animal husbandry, . . . . .	701 03	342 00
Dairying, . . . . .	39,164 74	29,805 99
Farm, . . . . .	61,369 34	41,599 81
Farm management, . . . . .	588 76	172 50
Poultry husbandry, . . . . .	13,638 17	9,355 08
Rural engineering, . . . . .	639 11	262 50
Division totals, . . . . .	\$117,253 89	\$81,750 83

*Summary.*

	DR.	CR.
By total division receipts, . . . . .		\$81,750 83
By bills receivable, . . . . .		6,958 87
By net apportionment, . . . . .		24,999 17
To total disbursements, . . . . .	\$117,253 89	
To bills payable, . . . . .	591 31	
Balance, . . . . .		4,136 33
	\$117,845 20	\$117,845 20

*Inventory of Quick Assets.*

	Nov. 30, 1919.	Nov. 30, 1920.
Inventory of produce, . . . . .	\$14,967 85	\$13,663 93
Inventory of cattle, . . . . .	17,090 00	17,850 00
Inventory of swine, . . . . .	1,507 00	1,171 00
Inventory of horses, . . . . .	4,350 00	3,650 00
Inventory of poultry, . . . . .	2,946 10	2,467 50
Inventory of sheep, . . . . .	2,010 00	2,885 00
	\$42,870 95	\$41,687 43



## HORTICULTURAL DIVISION.

*Disbursements and Receipts.*

	Disbursements.	Receipts.
Floriculture, . . . . .	\$7,024 55	\$5,530 80
General horticulture, . . . . .	8,742 43	843 26
Forestry, . . . . .	165 08	12 00
Grounds, . . . . .	7,486 07	22 30
Horticultural manufactures, . . . . .	3,311 36	601 15
Landscape gardening, . . . . .	479 42	386 00
Market gardening, . . . . .	6,018 22	3,096 25
Pomology, . . . . .	5,941 88	4,003 45
Mount Toby, . . . . .	393 48	585 11
Division totals, . . . . .	\$39,562 49	\$15,080 32

*Summary.*

	DR.	CR.
By total division receipts, . . . . .		\$15,080 32
By bills receivable, . . . . .		1,496 62
By net apportionment, . . . . .		27,994 68
To total division disbursements, . . . . .	\$39,562 49	
To bills payable, . . . . .	33 34	
By balance, . . . . .	4,975 79	
	\$44,571 62	\$44,571 62

*Inventory of Quick Assets.*

	Nov. 30, 1919.	Nov. 30, 1920.
Floriculture, . . . . .	\$1,200 00	\$1,500 00
General horticulture (live stock), . . . . .	1,995 00	1,855 00
Horticultural manufactures, . . . . .	200 00	150 00
Market gardening, . . . . .	175 50	85 00
Mount Toby, . . . . .	4,790 22	4,050 00
Pomology, . . . . .	455 00	1,350 00
	\$8,815 72	\$8,990 00

## EXPENSE OPERATING AND MAINTENANCE.

	Salaries and Labor.	Fuel and Water.	Repairs.	Equipment.	Miscellaneous.	Totals.
General:—						
General superintendent,	\$2,974 00	—	—	—	—	\$2,974 00
Office,	1,251 17	—	—	—	—	2,075 33
General expense,	1,855 54	—	\$1,742 24	—	—	3,597 78
Power plant:—						
Heat,	13,908 55	\$65,793 74	2,381 27	—	—	82,081 56
Light,	5,708 39	—	1,238 83	—	—	6,948 32
Tools,	—	—	—	\$953 56	—	953 56
Amherst Water Company,	—	2,717 90	—	—	—	2,717 90
Night watchman,	1,999 52	—	—	—	—	1,999 52
Mail service,	270 59	—	—	—	—	270 59
Water mains,	281 53	—	—	—	—	281 53
Steam mains,	1,590 96	—	—	—	—	1,590 96
Electric light circuit,	2,102 93	—	—	—	—	2,102 93
Freight and express,	—	—	—	—	1,383 59	1,383 59
Telephone,	—	—	—	—	1,613 69	1,613 69
Truck,	—	—	459 09	—	—	459 09
Miscellaneous sundry,	31 41	—	—	—	450 24	481 65
Sewers and cesspools,	96 52	—	—	—	—	96 52
Walks and drives,	22 90	—	—	—	—	22 90
Emergency maintenance,	1,759 92	—	365 64	284 73	487 83	2,898 12
Expert service:—						
Architect,	714 10	—	—	—	—	714 10
Engineer,	161 25	—	—	—	—	161 25
Fire department,	10 75	—	—	106 77	8 16	125 68
Totals,	\$34,739 03	\$68,511 64	\$6,187 17	\$1,345 06	\$4,769 67	\$115,552 57

EXPENSE OPERATING AND MAINTENANCE — *Continued.*

	Electric Repairs.	Plumbing Repairs.	Heat Repairs.	C. and M. Repairs.	Janitor.	Sundry.	Totals.
College buildings: —							
Adams Hall, . . . . .	\$3 69	\$25 64	\$2 30	\$5 99	—	\$278 43	\$282 12
Animal husbandry building, . . . . .	—	8 91	—	1 50	—	—	33 93
Apiary building, . . . . .	1 00	81 80	58 28	124 53	—	—	13 14
Chemical building, . . . . .	21 17	85 33	10 53	155 23	—	—	285 78
Clark Hall, . . . . .	1 46	—	—	42 00	—	—	252 55
Cold-storage building, . . . . .	—	174 08	596 84	303 93	—	—	42 00
Dairy building, . . . . .	17 22	201 59	10 45	202 05	—	—	1,092 07
Dairy barn and storage, . . . . .	78 30	179 72	85 43	959 39	—	—	492 39
Draper Hall, . . . . .	83 85	354 37	33 09	125 16	—	1,014 05	2,322 44
Drill Hall, . . . . .	2 80	—	33 48	—	—	—	515 42
Durfee glass house (old), . . . . .	—	—	118 75	18 35	—	—	33 48
Durfee glass house (new), . . . . .	—	84 15	23 97	261 27	—	—	137 10
Entomology building, . . . . .	3 92	34 04	122 78	112 20	—	—	373 31
French Hall, . . . . .	77 86	81 17	3 88	39 23	—	—	346 88
Horse barn, . . . . .	1 28	4 13	—	95 38	—	—	125 56
Horticultural barn, . . . . .	26 55	30 36	—	182 07	—	—	126 06
Hospital, . . . . .	23 36	74 82	—	68 13	—	—	235 79
Machine barn, . . . . .	—	—	3 84	204 54	—	—	142 95
Mathematics building, . . . . .	3 50	54 93	5 38	51 83	—	—	211 88
Microbiology building, . . . . .	20 10	5 17	12 41	8 68	—	—	132 24
Physics building, . . . . .	—	30	—	64	—	—	26 26
Piggery, . . . . .	—	8 15	1 15	51 36	—	—	94
Poultry No. 1, . . . . .	96	3 30	—	1 20	—	—	61 62
Poultry No. 2, . . . . .	1 65	—	—	27 38	—	—	6 15
Poultry No. 4, . . . . .	4 62	—	—	96 96	—	—	32 00
Poultry No. 5, . . . . .	—	—	—	360 29	—	—	96 96
Power building, . . . . .	128 88	207 14	91 55	53 13	\$369 70	—	1,157 56
Rural engineering building, . . . . .	4 92	35 52	—	168 41	—	—	58 05
Stockbridge Hall, . . . . .	41 13	48	50 71	—	—	—	295 77
Agronomy greenhouse, . . . . .	—	74 49	16 90	219 42	—	—	48
Turbine house, . . . . .	600 69	60 69	38 97	—	—	23 67	935 17
Upper plant house, . . . . .	5 73	10 19	6 26	3 86	—	—	106 36
Veterinary building, . . . . .	—	—	—	—	—	—	20 38

EXPENSE OPERATING AND MAINTENANCE — *Concluded.*

	Electric Repairs.	Plumbing Repairs.	Heat Repairs.	C. and M. Repairs.	Janitor.	Sundry.	Totals.
Waiting station, . . . . .	-	-	-	\$3 55	-	-	\$3 55
Wilder Hall, . . . . .	\$50 09	\$26 87	\$22 29	6 98	-	-	106 23
Young stock barn, . . . . .	2 10	23 72	-	30 93	-	-	56 75
East Experiment Station, . . . . .	-	58 74	-	12 06	-	-	70 80
East Experiment Station barn, . . . . .	-	8 67	-	6 09	-	-	14 76
West Experiment Station, . . . . .	2 20	27 09	15 31	58 72	-	-	103 32
West Experiment Station barn, . . . . .	52	4 03	12 15	141 12	-	-	157 82
North College, . . . . .	138 14	24 65	12 55	168 67	\$659 74	\$165 25	1,157 00
South College, . . . . .	121 91	113 95	11 21	546 44	659 76	157 25	1,610 52
Chapel, . . . . .	52 98	25 93	16 34	114 78	301 08	-	511 11
Bell ringer, . . . . .	-	-	-	-	-	95 99	95 99
Cashier's house, . . . . .	-	21 87	-	7 28	-	-	29 15
Farm bungalow, . . . . .	7 97	38 29	13 32	10 15	-	-	69 73
Farmhouse No. 1, . . . . .	6 87	130 22	25 50	162 59	-	-	325 18
Farmhouse No. 2, . . . . .	11 85	11 40	-	21 21	-	-	44 46
Goldberg house, . . . . .	2 19	10 40	-	94 22	-	-	106 81
Harlow house, . . . . .	-	48 04	-	530 73	-	-	578 77
Head of Division of Horticulture, . . . . .	1 73	40 40	1 85	30 51	-	-	34 49
Kellogg house, . . . . .	1 00	4 22	3 33	8 31	-	28 96	45 82
President's house, . . . . .	17 70	49 53	14 44	116 30	-	10 12	208 09
Stockbridge house, . . . . .	-	6 63	-	43 70	-	-	50 33
Tillson house, . . . . .	-	14 79	-	18	-	-	14 97
Totals, . . . . .	\$1,571 96	\$2,529 91	\$1,464 97	\$6,059 60	\$1,990 28	\$1,773 72	\$15,390 44

*Summary.*

General, . . . . .	\$115,552 57
College buildings, . . . . .	13,832 64
College residences, . . . . .	1,507 80
Totals, . . . . .	\$130,943 01



## EXPERIMENT STATION.

*Disbursements and Receipts.*

	Disburse- ments from Dec. 1, 1919, to Nov. 30, 1920.	Receipts from Dec. 1, 1919, to Nov. 30, 1920.	Apportion- ment for Year ending Nov. 30, 1920.	Balance to Credit.
Administration, . . . . .	\$943 03	\$1 35	\$1,100 00	\$156 97
Agricultural, . . . . .	8,747 21	1,689 80	9,500 00	752 79
Agricultural economics, . . . . .	434 66	—	600 00	165 34
Botanical, . . . . .	2,046 51	—	2,100 00	53 49
Chemical, . . . . .	3,879 58	2,432 80	5,000 00	1,120 42
Cranberry, . . . . .	5,874 74	3,912 35	4,000 00	—1,874 74
Entomological, . . . . .	514 56	—	700 00	185 44
Freight and express, . . . . .	197 52	—	400 00	202 48
Horticultural, . . . . .	2,329 82	16 20	2,000 00	—329 82
Library, . . . . .	524 66	—	500 00	—24 66
Meteorology, . . . . .	364 58	—	400 00	35 42
Microbiology, . . . . .	848 38	—	1,400 00	551 62
Poultry, . . . . .	2,690 18	—	2,700 00	9 82
Publications, . . . . .	2,552 05	—	2,725 00	172 95
Salaries, . . . . .	60,444 48	—	51,775 00	—8,669 48
Treasurer's office, . . . . .	359 41	—	400 00	40 59
Veterinary, . . . . .	532 04	—	700 00	167 96
Hatch fund, . . . . .	—	15,000 00	—	—
Adams fund, . . . . .	—	15,000 00	—	—
Transferred to general maintenance, . . . . .	—	2,935 19	—	—
State Treasurer, account of schedules, . . . . .	—	60,364 07	—	—
Income remitted to State Treasurer, . . . . .	8,044 81	—	—	—
	\$101,328 22	\$101,351 76	\$86,000 00	—\$7,283 41
Less refunds, . . . . .	7 69	7 69	—	—
	\$101,320 53	\$101,344 07	—	—
Balance beginning fiscal year Dec. 1, 1919, . . . . .	—	2,838 98	—	—
Balance on hand Nov. 30, 1920, . . . . .	2,862 52	—	—	—
Totals, . . . . .	\$104,183 05	\$104,183 05	—	—

EXPERIMENT STATION — *Continued.**Comparative Disbursements and Receipts, 1919-20.*

ACCOUNTS.	DISBURSEMENTS.		RECEIPTS.	
	1919.	1920.	1919.	1920.
Administration, . . . . .	\$835 87	\$943 03	\$1 00	\$1 35
Agriculture, . . . . .	9,205 27	8,747 21	4,908 59	1,689 80
Agricultural economics, . . . . .	699 16	434 66	-	-
Botanical, . . . . .	1,967 65	2,046 51	-	-
Chemical, . . . . .	4,991 27	3,879 58	3,820 67	2,432 80
Cranberry, . . . . .	3,618 41	5,874 74	4,234 46	3,912 35
Entomological, . . . . .	605 48	514 56	4 55	-
Freight and express, . . . . .	353 38	197 52	-	-
Horticultural, . . . . .	1,603 09	2,329 82	100 25	16 20
Library, . . . . .	742 17	524 66	-	-
Meteorology, . . . . .	321 96	364 58	-	-
Microbiology, . . . . .	1,258 22	848 38	-	-
Poultry, . . . . .	2,355 95	2,690 18	32 70	-
Publication, . . . . .	1,374 62	2,552 05	-	-
Salaries, . . . . .	50,753 50	60,444 48	-	-
Tillson farm, . . . . .	2,340 73	-	1,259 91	-
Treasurer's office, . . . . .	341 37	359 41	-	-
Veterinary, . . . . .	813 66	532 04	148 54	-
Hatch fund, . . . . .	-	-	15,000 00	15,000 00
Adams fund, . . . . .	-	-	15,000 00	15,000 00
Transferred to general maintenance,	-	-	-	2,935 19
State Treasurer, account of schedules,	-	-	48,728 05	60,364 07
Income remitted to State Treasurer,	8,752 05	8,044 81	-	-
	\$92,933 81	\$101,328 22	\$93,238 72	\$101,351 76
Less refunds, . . . . .	-	7 69	-	7 69
	\$92,933 81	\$101,320 53	\$93,238 72	\$101,344 07
Balance beginning of fiscal year, . .	-	-	2,534 07	2,838 98
Balance on hand at close of fiscal year,	2,838 98	2,862 52	-	-
Totals, . . . . .	\$95,772 79	\$104,183 05	\$95,772 79	\$104,183 05

EXPERIMENT STATION — *Concluded.**Analysis of Experiment Station Accounts.*

	Adams Fund.	Hatch Fund.	State Fund.	Totals.
Salaries, . . . . .	\$14,251 65	\$14,318 09	\$31,874 74	\$60,444 48
Labor, . . . . .	272 00	918 50	14,120 81	15,311 31
Publications, . . . . .	—	—	2,568 34	2,568 34
Postage and stationery, . . . . .	—	—	1,351 79	1,351 79
Freight and express, . . . . .	—	—	239 75	239 75
Heat, light, water and power, . . . . .	—	—	431 29	431 29
Chemical and laboratory supplies, . . . . .	—	—	1,211 26	1,211 26
Seeds, plants and sundry supplies, . . . . .	—	—	2,881 32	2,881 32
Fertilizers, . . . . .	216 22	—	950 45	1,166 67
Feedstuffs, . . . . .	—	—	790 14	790 14
Library, . . . . .	—	—	616 14	616 14
Tools, machinery and appliances, . . . . .	—	—	1,282 25	1,282 25
Furniture and fixtures, . . . . .	—	—	105 35	105 35
Scientific apparatus and specimens, . . . . .	—	—	344 28	344 28
Live stock, . . . . .	—	—	1,078 00	1,078 00
Traveling expenses, . . . . .	—	—	1,962 75	1,962 75
Contingent expenses, . . . . .	—	—	62 65	62 65
Buildings and land, . . . . .	—	—	1,435 64	1,435 64
Totals, . . . . .	\$14,739 87	\$15,236 59	\$63,306 95	\$93,283 41

*Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1919, . . . . .	—	\$2,838 98
Receipts from State Treasurer, . . . . .	—	63,299 26
Receipts from United States Treasurer, . . . . .	—	30,000 00
Receipts from other sources, . . . . .	—	8,044 81
Total disbursements, . . . . .	\$93,275 72 <sup>1</sup>	—
Receipts turned in to State Treasurer, . . . . .	8,044 81	—
	\$101,320 53	\$104,182 05
Bills receivable Dec. 1, 1919, deducted, . . . . .	—	770 44
Bills payable Dec. 1, 1919, deducted, . . . . .	954 14	—
	\$100,366 39	\$103,411 61
Bills receivable Nov. 30, 1920, . . . . .	—	640 87
Bills payable Nov. 30, 1920, . . . . .	169 19	—
Balance, . . . . .	3,516 90	—
	\$104,052 48	\$104,052 48

<sup>1</sup> Includes amount transferred to general maintenance, \$2,935.19.

EXTENSION SERVICE.<sup>1</sup>*Disbursements and Receipts.*

CLASSIFICATION.	Disbursements.	Receipts.	Apportionment.	Balance.
Administration, . . . . .	\$4,321 37	\$62 71	\$4,000 00	—\$321 37
Animal husbandry, . . . . .	787 49	—	1,200 00	412 51
Co-operative marketing, . . . . .	1,478 98	—	1,500 00	21 02
Correspondence Courses, . . . . .	1,592 61	643 00	800 00	—792 61
County agents' work, . . . . .	1,726 87	—	1,800 00	73 13
Dairying, . . . . .	1,584 42	—	1,800 00	215 58
Director's office, . . . . .	82 52	33 09	2,700 00	2,617 48
Emergency, . . . . .	—	—	2,000 00	2,000 00
Exhibits, . . . . .	3,649 04	—	5,000 00	1,350 96
Extension courses at College, . . . . .	1,318 55	—	3,000 00	1,681 45
Extension schools, . . . . .	488 03	28 75	250 00	—238 03
Farm management demonstration, . . . . .	1,202 67	123 53	1,000 00	—202 67
Home demonstration agents, . . . . .	5,901 85	173 14	4,500 00	—1,401 85
Home economics specialists, . . . . .	29 23	—	—	—29 23
Home gardening, . . . . .	760 24	—	300 00	—460 24
Horticultural manufactures, . . . . .	1,946 67	—	1,600 00	—346 67
Injurious insects, . . . . .	46 46	—	100 00	53 54
Junior Extension work, . . . . .	5,241 03	—	3,500 00	—1,741 03
Landscape extension, . . . . .	93 55	—	50 00	—43 55
Lectures, . . . . .	51 56	—	100 00	48 44
Library extension, . . . . .	317 98	—	400 00	82 02
Local community organization, . . . . .	—	—	100 00	100 00
Methods of Extension instruction, . . . . .	162 78	—	600 00	437 22
Plant diseases, . . . . .	68 65	—	100 00	31 35
Pomology, . . . . .	2,102 44	—	1,200 00	—902 44
Poultry husbandry, . . . . .	1,496 96	—	1,200 00	—296 96
Printing, . . . . .	2,325 74	4 00	2,600 00	274 26
Salaries, . . . . .	44,409 43	1,469 17	51,000 00	6,590 57
Sheep husbandry, . . . . .	550 18	—	600 00	49 82
Soils and crops, . . . . .	1,051 16	—	1,000 00	—51 16
State Treasurer, account of schedules, . . . . .	—	84,788 46	—	—
Income to State Treasurer, . . . . .	2,537 39	—	—	—
	\$87,325 85	\$87,325 85	\$94,000 00	\$9,211 54

<sup>1</sup> Includes State Smith-Lever Fund.



EXTENSION SERVICE — *Continued.**Summary.*

	Disbursements.	Receipts.
Balance Dec. 1, 1919, <sup>1</sup> . . . . .	—	\$4,623 72
Receipts Nov. 30, 1920, . . . . .	—	2,537 39
Received from State Treasurer, . . . . .	—	84,788 46
Received from United States Treasurer, . . . . .	—	31,247 93
Disbursements to Nov. 30, 1920, <sup>1</sup> . . . . .	\$113,811 81	—
Receipts turned in to State Treasurer, . . . . .	2,537 39	—
	\$116,349 20	\$123,197 50
Bills receivable Dec. 1, 1919, deducted, . . . . .	—	88 82
Bills payable Dec. 1, 1919, deducted, . . . . .	708 11	—
	\$115,641 09	\$123,108 68
Bills receivable Nov. 30, 1920, . . . . .	—	7 50
Bills payable Nov. 30, 1920, . . . . .	339 01	—
Balance, . . . . .	7,136 08	—
	\$123,116 18	\$123,116 18

<sup>1</sup> Includes Federal Smith-Lever Fund.

EXTENSION SERVICE — *Concluded.**Analysis of Extension Service Disbursements.*

	Travel.	Equip- ment.	Supplies.	Postage, Sta- tionery and Small Printing.	Salaries and Labor.	Totals.
Administration, . . . . .	\$1,414 07	\$754 36	\$572 61	\$1,493 34	\$86 99	\$4,321 37
Animal husbandry, . . . . .	720 73	—	8 01	58 75	—	787 49
Co-operative marketing, . . . . .	1,210 49	93 10	18 82	106 42	50 15	1,478 98
Correspondence Courses, . . . . .	—	84 60	72 72	1,217 63	217 66	1,592 61
County agents' work, . . . . .	998 94	124 50	71 34	456 50	75 59	1,726 87
Dairying, . . . . .	1,281 75	2 00	10 65	61 87	228 15	1,584 42
Director's office, . . . . .	—	65 81	22 60	10 33	—16 22	82 52
Exhibits, . . . . .	915 97	316 82	1,048 20	357 39	1,010 66	3,649 04
Extension courses at College, . . . . .	161 77	—	277 83	458 01	420 94	1,318 55
Extension schools, . . . . .	34 80	—	62 93	287 98	102 32	488 03
Farm management demonstra- tion, . . . . .	514 57	—	55 12	342 12	290 86	1,202 67
Home demonstration agents, . . . . .	3,712 26	221 25	371 33	1,091 19	505 82	5,901 85
Home economics specialists, . . . . .	29 23	—	—	—	—	29 23
Home gardening, . . . . .	129 49	22 15	89 53	169 42	349 65	760 24
Horticultural manufactures, . . . . .	1,420 11	188 89	147 06	129 65	60 96	1,946 67
Injurious insects, . . . . .	46 46	—	—	—	—	46 46
Junior Extension work, . . . . .	3,588 78	36 35	937 16	656 12	22 62	5,241 03
Landscape extension, . . . . .	7 70	—	43 93	1 44	40 48	93 55
Lectures, . . . . .	24 06	—	—	—	27 50	51 56
Library Extension, . . . . .	41 74	39 20	206 93	30 11	—	317 98
Local community organization, . . . . .	—	—	—	—	—	—
Methods of Extension instruc- tion, . . . . .	53 53	—	20 07	2 25	86 93	162 78
Plant diseases, . . . . .	65 40	—	2 25	1 00	—	68 65
Pomology, . . . . .	1,366 40	162 27	300 58	48 86	224 33	2,102 44
Poultry husbandry, . . . . .	1,325 11	15 14	47 18	66 28	43 25	1,496 96
Printing, . . . . .	48 56	468 68	—	1,808 50	—	2,325 74
Salaries, . . . . .	—	—	—	—	44,409 43	44,409 43
Sheep husbandry, . . . . .	425 10	—	23 49	47 01	54 58	550 18
Soils and crops, . . . . .	898 75	5 79	39 93	24 43	82 26	1,051 16
Totals, . . . . .	\$20,435 77	\$2,600 91	\$4,450 27	\$8,926 60	\$48,374 91	\$84,788 46

## SMITH-LEVER FUND (FEDERAL).

	Disbursements.	Receipts.
Administration, . . . . .	\$69 80	-
Animal husbandry, . . . . .	30 00	-
Dairying, . . . . .	30 00	-
Extension schools, . . . . .	241 54	-
District and county agents, . . . . .	57 16	-
Farm management demonstration, . . . . .	30 00	-
Home demonstration agents, . . . . .	407 15	-
Junior Extension, . . . . .	851 22	-
Pomology, . . . . .	30 00	-
Printing and publications, . . . . .	714 97	-
Salaries, . . . . .	26,531 51	-
Sheep husbandry, . . . . .	30 00	-
State Treasurer, . . . . .	-	\$31,247 93
	\$29,023 35	\$31,247 93
Balance beginning fiscal year Dec. 1, 1919, . . . . .	-	4,623 72
Balance on hand Nov. 30, 1920, . . . . .	6,848 30	-
Totals, . . . . .	\$35,871 65	\$35,871 65

## SHORT COURSES.

	Personal Services.	Office.	Laboratory Supplies.	Equipment.	Travel.	Printing.	Totals.
Two-Year Course, . . . . .	\$16,255 58	\$709 58	\$4,464 22	\$533 25	\$335 69	-	\$22,298 32
Ten Weeks' Winter School, . . . . .	707 96	137 53	111 43	12 75	18 04	-	987 71
Summer School, . . . . .	5,803 11	112 47	391 36	36 20	61 35	-	6,404 49
Administration, . . . . .	4,540 00	-	-	11 79	-	-	4,551 79
Printing, . . . . .	-	-	-	-	-	\$1,004 90	1,004 90
	\$27,306 65	\$959 58	\$4,967 01	\$593 99	\$415 08	\$1,004 90	\$35,247 21



## SUMMARY.

	Dr.	Cr.
State appropriation, . . . . .		\$39,600 00
Amount of receipts, . . . . .		4,810 25
Amount of receipts transferred to State Treasurer, . .	\$4,810 25	
Department expenditures, . . . . .	35,247 21	
Balance unexpended, . . . . .	4,352 79	
	\$44,410 25	\$44,410 25

## MARKET-GARDENING FIELD STATION.

	Debit.	Credit.
Labor, . . . . .	\$5,277 29	
Maintenance, . . . . .	2,617 78	
Equipment, . . . . .	62 43	
Total, . . . . .	\$7,957 50	
State appropriation, . . . . .		\$8,400 00
Amount of receipts, . . . . .		2,286 34
Amount of receipts transferred to State Treasurer, . .	\$2,286 34	
Department expenditures, . . . . .	7,957 50	
Balance unexpended, . . . . .	442 50	
	\$10,686 34	\$10,686 34

## SPECIAL APPROPRIATIONS.

	Date made.	Appropriation.	Amount expended to Date.	Unexpended Balance.
Power plant improvements, . . . . .	1917	\$40,000 00	\$39,988 16	\$11 84
Market-Garden Field Station, . . . . .	1918	16,500 00	16,496 14	3 86
Dining hall, . . . . .	1918	12,000 00	11,988 81	11 19
Improvements and equipment, . . . . .	1919	20,000 00	19,985 48	14 52
Women's dormitory, . . . . .	1919	127,400 00	106,235 81	21,164 19
Market-Garden Field Station, . . . . .	1919	15,000 00	9,404 95	5,595 05
Engineering studies, . . . . .	1919	2,000 00	1,937 18	62 82
Improvements and equipment, . . . . .	1920	50,000 00	24,847 41	25,152 59
Cavalry barn, . . . . .	1920	15,000 00	1,283 39	13,716 61
	—	\$297,900 00	\$232,167 33	\$65,732 67
Amount spent previous to Dec. 1, 1919, . . . . .	—	—	—	86,342 66
Amount expended during fiscal year, . . . . .	—	—	—	145,824 67
Unexpended balance Nov. 30, 1920, . . . . .	—	—	65,732 67	—
	—	\$297,900 00	\$297,900 00	\$297,900 00

## INVENTORY — REAL ESTATE.

*Land (Estimated Value).*

Angus land, . . . . .	\$800 00
Allen place, . . . . .	500 00
Baker place, . . . . .	2,500 00
Bangs place, . . . . .	2,350 00
Brown land, . . . . .	500 00
Charmbury place, . . . . .	450 00
Clark place, . . . . .	4,500 00
College farm, . . . . .	37,000 00
Cranberry land, . . . . .	12,745 00
Geo. Cutler, Jr., trustee, . . . . .	2,700 00
Dickinson land, . . . . .	7,850 00
Harlow farm, . . . . .	1,584 63
Hawley and Brown place, . . . . .	675 00
Kellogg place, . . . . .	3,368 45
Loomis place, . . . . .	415 00
Louisa Baker place, . . . . .	5,000 00
Market-Garden Field Station, . . . . .	4,800 00
Mount Toby demonstration forest, . . . . .	30,000 00
Newell farm, . . . . .	2,800 00
Old creamery place, . . . . .	1,000 00
Owen farm, . . . . .	5,000 00
Pelham quarry, . . . . .	500 00
Tillson farm, . . . . .	2,950 00
Westcott place, . . . . .	2,250 00
Total, . . . . .	\$132,238 08

*College Buildings (Estimated Value).*

	Inventory at Beginning of Year.	Per Cent de- ducted.	Value at Beginning of Year less De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Animal husbandry building, . . .	\$9,211 36	2	\$9,027 13	\$33 93	\$9,061 06
Apiary, . . . . .	2,993 02	2	2,933 16	13 14	2,946 30
Cashier's house, . . . . .	1,603 60	5	1,523 42	29 15	1,552 57
Chemical laboratory, . . . . .	8,333 84	5	7,917 15	598 40	8,515 55
Clark Hall, . . . . .	63,068 72	2	61,807 35	252 55	62,059 90
Cold-storage laboratory, . . . . .	10,973 77	2	10,754 29	42 00	10,796 29
Dairy building, . . . . .	70,175 79	2	68,772 27	1,092 07	69,864 34
Dairy barn and storage, . . . . .	26,918 07	3	26,110 53	492 39	26,602 92
Draper Hall, . . . . .	67,467 14	3	65,443 13	1,630 39	67,073 52
Drill hall and gun shed, . . . . .	8,763 96	5	8,325 76	944 51	9,270 27
Durfee glass house (old), . . . . .	8,157 21	5	7,749 35	33 48	7,782 83
Durfee glass house (new), . . . . .	12,049 70	5	11,447 21	137 10	11,584 31
Entomology building, . . . . .	73,639 10	2	72,166 32	373 31	72,539 63
Farm bungalow, . . . . .	2,584 01	3	2,506 49	69 73	2,576 22
Farm house No. 1, . . . . .	2,604 80	3	2,526 66	325 18	2,851 84
Farm house No. 2, . . . . .	4,172 38	8	3,838 59	44 46	3,883 05
French Hall, . . . . .	46,324 41	2	45,397 92	346 88	45,744 80
Grounds' tool shed, . . . . .	232 75	5	221 11	-	221 11
Harlow house, . . . . .	1,554 91	5	1,477 16	578 77	2,055 93
Horse barn, . . . . .	4,535 04	3	4,398 99	125 56	4,524 55
Head of Division of Horticulture, . . . . .	2,253 03	5	2,140 38	34 49	2,174 87
Horticultural barn, . . . . .	2,469 32	3	2,395 24	1,232 68	3,627 92
Horticultural tool shed, . . . . .	1,717 47	3	1,665 95	-	1,665 95
Horticultural open shed, . . . . .	-	-	-	501 38	501 38
Horticultural manufactures' shed, . . . . .	-	-	-	3,185 24	3,185 24
Hospital, . . . . .	14,617 46	2	14,325 11	235 79	14,560 90
Kellogg house and barn, . . . . .	2,568 69	5	2,440 26	803 66	3,243 92
Machinery barn, . . . . .	3,471 05	3	3,366 92	142 95	3,509 87
Market-Garden Field Station barn, . . . . .	3,293 15	3	3,194 36	-	3,194 36
Mathematics building, . . . . .	4,933 40	5	4,686 73	211 88	4,898 61
Microbiology building, . . . . .	58,937 64	2	57,758 89	132 24	57,891 13
Military storage, . . . . .	237 50	5	225 62	-	225 62
Mount Toby house and barn, . . . . .	3,809 67	5	3,619 19	-	3,619 19
North dormitory, . . . . .	24,519 60	2	24,029 21	1,157 00	25,186 21
Physics laboratory, . . . . .	4,793 40	5	4,553 73	26 26	4,579 99
Piggery, . . . . .	2,592 78	3	2,515 00	94	2,515 94

*College Buildings (Estimated Value) — Concluded.*

	Inventory at Beginning of Year.	Per Cent de- ducted.	Value at Beginning of Year less De- terioration.	Repairs and Improve- ments during Year.	Total Value, at Close of Fiscal Year.
Poultry department:—					
No. 1 demonstration building,	\$1,330 55	2	\$1,303 94	\$61 62	\$1,365 56
No. 2 oil house,	70 17	2	68 77	6 15	74 92
No. 3 brooder killing and fattening laboratory.	2,332 49	2	2,285 84	—	2,285 84
No. 4 mechanics, storage building and incubator cellar.	3,388 54	2	3,320 77	32 00	3,352 77
No. 5 laying house,	1,640 44	2	1,607 63	96 96	1,704 59
No. 6 manure shed,	92 84	2	90 98	—	90 98
No. 7 small henhouse,	46 72	2	45 79	—	45 79
No. 8 breeding house,	1,479 77	2	1,450 17	—	1,450 17
No. 9 experimental breeding house,	580 39	2	568 78	—	568 78
No. 10 duck house,	96 05	2	94 13	—	94 13
No. 11 unit house for 200 hens,	485 93	2	476 21	—	476 21
No. 12 unit house for 100 hens,	392 10	2	384 26	—	384 26
Power plant and storage building, in- cluding coal pocket.	48,196 70	2	47,232 77	787 86	48,020 63
President's house,	13,264 35	3	12,866 42	208 09	13,074 51
Quarantine barn,	472 30	3	458 13	—	458 13
Rural engineering building,	3,515 51	2	3,445 20	58 05	3,503 25
Sheep barn,	1,413 59	3	1,371 18	—	1,371 18
South dormitory,	37,306 65	2	36,560 52	2,010 52	38,571 04
Stockbridge Hall,	172,179 48	2	168,735 89	295 77	169,031 66
Agronomy greenhouse,	1,999 49	2	1,959 50	48	1,959 98
Stockbridge house,	1,599 54	5	1,519 56	50 33	1,569 89
Stone chapel,	27,891 96	2	27,334 12	1,373 86	28,707 98
Turbine house,	17,665 00	2	17,311 70	935 17	18,246 87
Vegetable plant house,	4,370 29	5	4,151 78	106 36	4,258 14
Veterinary laboratory and stable,	22,083 55	2	21,641 88	20 38	21,662 26
Waiting station,	466 77	2	457 43	3 55	460 98
Wilder Hall,	34,303 15	2	33,617 09	106 23	33,723 32
Young stock barns,	5,854 44	3	5,678 81	56 75	5,735 56
Totals,	\$960,096 50	—	\$937,299 83	\$21,037 64	\$958,337 47



*College Equipment (Estimated Value).*

## Administrative division:—

Dean's office, . . . . .	\$461 80
President's office, . . . . .	2,485 00
Registrar's office, . . . . .	1,210 70
Treasurer's office, . . . . .	3,705 97

## Agricultural division:—

Agronomy, . . . . .	6,553 14
Animal husbandry, . . . . .	670 01
Dairy, . . . . .	24,569 10
Farm, . . . . .	46,950 59
Farm management, . . . . .	939 46
General agriculture, . . . . .	3,484 51
Poultry, . . . . .	6,513 04
Rural engineering, . . . . .	4,927 63
Domestic science, . . . . .	2,557 69
Dining hall, . . . . .	18,531 67
Extension, . . . . .	15,886 31

## General science:—

Apiary, . . . . .	2,235 18
Botanical, . . . . .	24,329 30
Chemical, . . . . .	18,088 69
Entomology, . . . . .	5,208 67
Mathematics, . . . . .	2,420 00
Microbiology, . . . . .	7,606 88
Physics, . . . . .	6,844 89
Veterinary, . . . . .	10,285 25
Zoölogical and geological, . . . . .	17,136 10

Graduate School, . . . . .	115 80
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## Horticultural division:—

Floriculture, . . . . .	31,771 86
Forestry, . . . . .	2,446 54
General horticulture, . . . . .	7,744 65
Grounds, . . . . .	1,986 38
Horticultural manufactures, . . . . .	4,626 65
Landscape gardening, . . . . .	5,427 66
Market-Garden Field Station, . . . . .	2,298 30
Market gardening, . . . . .	2,191 25
Mount Toby Reservation, . . . . .	4,061 51
Pomology, . . . . .	9,242 01

Hospital, . . . . .	1,131 75
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## Humanities division:—

Economics and sociology, . . . . .	134 72
Language and literature, . . . . .	678 00

Library, . . . . .	114,606 38
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Military, . . . . .	1,410 54
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## Operating and maintenance:—

College supply, . . . . .	1,674 03
Fire apparatus, . . . . .	2,079 60

## General maintenance:—

Carpentry and masonry supplies, . . . . .	7,473 46
Electrical supplies, . . . . .	4,208 75
Equipment, . . . . .	17,649 20
Heating and plumbing supplies, . . . . .	10,323 25

*College Equipment (Estimated Value) — Concluded.*Operating and maintenance — *Con.*

Painting supplies, . . . . .	\$1,497 04
Steam main, . . . . .	54,750 92
Lighting lines, . . . . .	8,675 80
Janitor's supplies, . . . . .	1,071 52
Sewer line, . . . . .	12,593 12
Water mains, . . . . .	11,373 32
Physical education, . . . . .	1,769 61
Rural social science: —	
Agricultural economics, . . . . .	1,620 45
Agricultural education, . . . . .	1,301 00
Rural sociology, . . . . .	351 32
Short course, . . . . .	990 11
Textbooks, . . . . .	2,318 08
Trophy room, . . . . .	1,200 00
Women's dormitory, . . . . .	9,001 35
Total, . . . . .	\$575,397 51

*Experiment Station Buildings (Estimated Value).*

	Inventory at Beginning of Year.	Per Cent.	Cost at Beginning of Year, less Per Cent De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Year.
Agricultural laboratory, . . . . .	\$14,224 78	2	\$13,940 28	\$323 82	\$14,264 10
Agricultural barn, . . . . .	4,448 60	3	4,315 14	14 76	4,329 90
Agricultural farmhouse, . . . . .	1,417 41	3	1,374 89	106 81	1,481 70
Agricultural glass house, . . . . .	386 90	5	367 55	—	367 55
Cranberry buildings, . . . . .	3,412 96	5	3,242 31	—	3,242 31
Plant and animal chemistry laboratory, . . . . .	28,079 50	2	27,517 91	103 32	27,621 23
Plant and animal chemistry barns, . . . . .	4,081 24	3	3,958 80	157 82	4,116 62
Plant and animal chemistry dairy, . . . . .	1,717 47	3	1,665 95	—	1,665 95
Six poultry houses, . . . . .	562 53	2	551 28	—	551 28
Entomological glass houses, . . . . .	718 24	5	682 33	—	682 33
Tillson house, . . . . .	558 40	5	530 48	14 97	545 45
Tillson barn, . . . . .	1,083 00	5	1,028 85	—	1,028 85
Totals, . . . . .	\$60,691 03	—	\$59,175 77	\$721 50	\$59,897 27

*Experiment Station Equipment (Estimated Value).*

Apiary, . . . . .	\$158 92
Agricultural Economics Department, . . . . .	183 37
Agricultural laboratory, . . . . .	7,889 10
Botanical laboratory, . . . . .	6,558 38
Chemical laboratory, . . . . .	27,909 85
Cranberry station, . . . . .	4,442 48
Director's office, . . . . .	5,533 21
Entomological laboratory, . . . . .	23,787 06
Horticultural laboratory, . . . . .	4,976 75
Meteorological laboratory, . . . . .	673 00
Microbiological laboratory, . . . . .	2,380 00
Poultry Department, . . . . .	4,798 65
Treasurer's office, . . . . .	1,018 00
Total, . . . . .	<hr/> \$90,308 77

*Inventory Summary.*

Land, . . . . .	\$132,238 08
College buildings, . . . . .	958,337 47
College equipment, . . . . .	575,397 51
Experiment Station buildings, . . . . .	59,897 27
Experiment Station equipment, . . . . .	90,308 77

Total, . . . . .	<hr/> \$1,816,179 10
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	Acres.
College estate (area), . . . . .	642.79
Cranberry station, Wareham (area), . . . . .	23.67
Market-Garden Field Station, Lexington (area), . . . . .	12.00
Mount Toby demonstration forest (area), . . . . .	755.27
Rifle range, . . . . .	46.20
Pelham quarry, . . . . .	.50

Total acreage, . . . . .	<hr/> 1,480.43
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## STUDENTS' TRUST FUND ACCOUNT.

	Disburse- ments, Year ending Nov. 30, 1920.	Receipts, Year ending Nov. 30, 1920.	Balance on Hand.	Balance brought forward Dec. 1, 1919.
Athletics, . . . . .	\$16,603 61	\$15,414 63	—\$2,329 92	—\$1,140 94
Dining hall, . . . . .	94,648 47	96,514 72	—9,363 80	—11,230 05
Keys, . . . . .	90 50	89 00	75 50	77 00
Students' deposits, . . . . .	83,732 72	80,003 02	14,126 94	17,856 64
Social Union, . . . . .	1,196 70	975 51	596 74	817 93
Textbooks, . . . . .	9,825 19	9,970 64	820 08	674 63
Athletic field, . . . . .	34 15	514 85	224 44	—256 26
Uniforms, . . . . .	8 62	104 64	127 56	31 54
Cow testing, . . . . .	17,547 55	17,591 47	359 00	315 08
Totals, . . . . .	\$223,687 51	\$221,178 48	\$4,636 54	\$7,145 57
	4,636 54	7,145 57	—	—
	\$228,324 05	\$228,324 05	—	—

## CONDENSED OPERATING STATEMENT OF THE DINING HALL.

	Operating Charges.	Income.
<b>1919.</b>		
Dec. 1, balance, . . . . .	—\$11,230 05	—
<b>1920.</b>		
Nov. 30, Total disbursements, . . . . .	94,648 47	—
Outstanding bills, . . . . .	3,001 27	—
Total collections, . . . . .	—	\$96,514 72
Accounts outstanding, . . . . .	—	1,061 34
Inventory, . . . . .	—	14,559 79
Balance, . . . . .	3,256 06	—
	\$112,135 85	\$112,135 85

ENDOWMENT FUND.<sup>1</sup>

	Principal.	Income.
United States grant (5 per cent), . . . . .	\$219,000 00	\$7,300 00
Commonwealth grant (3½ per cent), . . . . .	142,000 00	3,313 32
Total, . . . . .	—	\$10,613 32

<sup>1</sup> This fund is in the hands of the State Treasurer, and the Massachusetts Agricultural College received two-thirds of the income from the same.



## BURNHAM EMERGENCY FUND.

	Market Value Dec. 1, 1920.	Par Value.	Income.
Two bonds American Telephone and Telegraph Company 4s, at \$770, . . . . .	\$1,540 00	\$2,000 00	\$80 00
Two bonds Western Electric Company 5s, at \$940, . . . . .	1,880 00	2,000 00	100 00
One United States Liberty Bond 4½s, at . . . . .	425 00	500 00	20 63
Puget Sound Traction, Light and Power Company 7s, . . . . .	490 00	500 00	17 50
	\$4,335 00	\$5,000 00	\$218 13
Unexpended balance Dec. 1, 1919, . . . . .	—	—	580 55
	—	—	\$798 68
Disbursements for fiscal year ending Nov. 30, 1920, . . . . .	—	—	501 22
Cash on hand Nov. 30, 1920, . . . . .	—	—	\$297 46

## LIBRARY FUND.

Five bonds New York Central & Hudson River Railroad Company 4s, at \$700, . . . . .	\$3,500 00	\$5,000 00	\$200 00
Five bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$850, . . . . .	4,250 00	5,000 00	200 00
Two shares New York Central & Hudson River Railroad Company stock, at \$74, . . . . .	148 00	200 00	10 00
Amherst Savings Bank, deposit, . . . . .	167 77	167 77	8 44
	\$8,065 77	\$10,367 77	\$418 44
Refund, . . . . .	—	—	11 21
	—	—	\$429 65
Disbursements for fiscal year ending Nov. 30, 1920, . . . . .	—	—	429 65

## SPECIAL FUNDS.

*Endowed Labor Fund (the Gift of a Friend of the College).*

Two bonds American Telephone and Telegraph Company 4s, at \$770, . . . . .	\$1,540 00	\$2,000 00	\$80 00
Two bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$700, . . . . .	1,400 00	2,000 00	80 00
One bond New York Central Railroad debenture 4s, . . . . .	920 00	1,000 00	40 00
One bond Louisville Gas and Electric 7s, . . . . .	970 00	1,000 00	70 00
Amherst Savings Bank, deposit, . . . . .	143 39	143 39	7 22
One United States Liberty Bond 4½s, . . . . .	850 00	1,000 00	42 50
	\$5,823 39	\$7,143 39	\$319 72
Unexpended balance Dec. 1, 1919, . . . . .	—	—	393 75
Cash on hand Nov. 30, 1920, . . . . .	—	—	\$713 47

*Whiting Street Scholarship Fund.*

One bond New York Central debenture 4s, . . . . .	\$920 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit, . . . . .	271 64	271 64	13 72
	\$1,191 64	\$1,271 64	\$53 72
Unexpended balance Dec. 1, 1919, . . . . .	—	—	395 19
Cash on hand Nov. 30, 1920, . . . . .	—	—	\$448 91

SPECIAL FUNDS — *Continued.**Hills Fund.*

	Market Value Dec. 1, 1920.	Par Value.	Income.
Two United States Liberty Bonds 4½s, at \$850,	\$1,700 00	\$2,000 00	\$83 75
One bond American Telephone and Telegraph Company 4s, at \$770,	770 00	1,000 00	40 00
One bond New York Central & Hudson River Railroad debenture 4s,	720 00	1,000 00	40 00
One bond New York Central Railroad debenture 4s,	920 00	1,000 00	40 00
Three bonds Pacific Telephone and Telegraph Company 5s, at \$820,	2,460 00	3,000 00	150 00
One bond Western Electric Company 5s,	940 00	1,000 00	50 00
Amherst Savings Bank, deposit,	72 75	72 75	3 65
Boston & Albany Railroad stock, 3½ bonds, at \$125,	453 00	362 00	31 68
Electric Securities Company bonds, 1½ bonds, at \$820,	967 60	1,180 00	59 00
Two bonds Louisville Gas and Electric 7s, at \$940,	1,940 00	2,000 00	140 00
	\$10,943 35	\$12,614 75	\$638 08
Unexpended balance Dec. 1, 1919,	—	—	914 96
	—	—	\$1,553 04
Disbursements for fiscal year ending Nov. 30, 1920,	—	—	211 14
Cash on hand,	—	—	\$1,341 90

*Mary Robinson Fund.*

Amherst Savings Bank, deposit,	\$142 00	\$142 00	\$7 17
Boston & Albany Railroad stock, ¾ share, at \$125,	47 00	38 00	3 32
Electric Securities Company bonds, 4½ bonds, at \$820,	672 40	820 00	41 00
	\$861 40	\$1,000 00	\$51 49
Unexpended balance Dec. 1, 1919,	—	—	290 50
Cash on hand Nov. 30, 1920,	—	—	\$341 89

*Grinnell Prize Fund.*

Ten shares New York Central & Hudson River Railroad stock, at \$74,	\$740 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1919,	—	—	245 74
	\$740 00	\$1,000 00	\$295 74
Disbursements for prizes,	—	—	50 00
Cash on hand Nov. 30, 1920,	—	—	\$245 74

*Gassett Scholarship Fund.*

One bond New York Central & Hudson River Railroad debenture 4s,	\$720 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit,	11 64	11 64	54
	\$731 64	\$1,011 64	\$40 54
Unexpended balance Dec. 1, 1919,	—	—	304 19
Cash on hand Nov. 30, 1920,	—	—	\$344 73

SPECIAL FUNDS — *Continued.**Massachusetts Agricultural College (Investment).*

	Market Value Dec. 1, 1920.	Par Value.	Income.
One share New York Central & Hudson River Railroad stock, at \$74, . . . . .	\$74 00	\$100 00	\$5 00
Unexpended balance Dec. 1, 1919, . . . . .	—	—	95 45
Cash on hand Nov. 30, 1920, . . . . .	—	—	\$100 45

*Danforth Keyes Bangs Fund.*

Two bonds Pacific Telephone and Telegraph Company 5s, at \$820, . . . . .	\$1,640 00	\$2,000 00	\$100 00
Two bonds Union Electric and Power Company 5s, at \$820, Two bonds American Telephone and Telegraph Company 4s, at \$770, . . . . .	1,640 00 1,540 00	2,000 00 2,000 00	100 00 80 00
One United States Liberty Bond 4½s, . . . . .	850 00	1,000 00	42 50
Interest from students' loans, . . . . .	—	—	82 84
	\$5,670 00	\$7,000 00	\$405 34
Unexpended balance Dec. 1, 1919, . . . . .	—	—	577 78
	—	—	\$983 12
Total loans made to students during fiscal year, \$2,539 00 Cash received on account of students' loans, . . 1,964 00 Excess of loans made over accounts paid by students, . . . . .	—	—	575 00
Cash on hand Nov. 30, 1920, . . . . .	—	—	\$408 12

*John C. Cutter Fund.*

One bond Pacific Telephone and Telegraph Company 5s, at \$820, . . . . .	\$820 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1919, . . . . .	—	—	161 50
	\$820 00	\$1,000 00	\$211 50
Disbursements for fiscal year to date, . . . . .	—	—	81 71
Cash on hand Nov. 30, 1920, . . . . .	—	—	\$129 79

*William R. Sessions Fund.*

One \$500 bond New York Central & Hudson River Rail- road 6s, . . . . .	\$460 00	\$500 00	\$30 00
Three United States Liberty Bonds, two at \$1,000 and one at \$500, 4½s, at \$850, . . . . .	2,125 00	2,500 00	103 12
One bond Toledo Light and Power Company 7s, . . . . .	970 00	1,000 00	70 00
One bond United Electric Light Company 6s, . . . . .	1,000 00	1,000 00	60 00
	\$4,555 00	\$5,000 00	\$263 12
Earnings from exchange of bonds, . . . . .	—	—	6 67
Unexpended balance Dec. 1, 1919, . . . . .	—	—	50 58
	—	—	\$320 37
Disbursements for fiscal year to date, . . . . .	—	—	191 38
Cash on hand Nov. 30, 1920, . . . . .	—	—	\$128 99

SPECIAL FUNDS — *Concluded.**Alvord Dairy Scholarship Fund.*

	Market Value Dec. 1, 1920.	Par Value.	Income.
One United States Liberty Bond 4½s, . . . . .	\$850 00	\$1,000 00	\$41 25
One bond Toledo Light and Power Company 7s, . . . . .	970 00	1,000 00	70 00
Two bonds United Electric Light Company 6s, at \$1,000, . . . . .	2,000 00	2,000 00	120 00
	\$3,820 00	\$4,000 00	\$231 25
Earnings from exchange of bonds, . . . . .	—	—	6 67
Unexpended balance Dec. 1, 1919, . . . . .	—	—	215 30
Cash on hand Nov. 30, 1920, . . . . .	—	—	\$453 22

SUMMARY OF BALANCE ON HAND OF THE INCOME FROM FUNDS HELD IN  
TRUST BY THE MASSACHUSETTS AGRICULTURAL COLLEGE.

Burnham emergency fund, . . . . .	\$297 46
Endowed labor fund, . . . . .	713 47
Whiting Street scholarship fund, . . . . .	448 91
Hills fund, . . . . .	1,341 90
Mary Robinson fund, . . . . .	341 99
Grinnell prize fund, . . . . .	245 74
Gassett scholarship fund, . . . . .	344 73
Massachusetts Agricultural College investment fund, . . . . .	100 45
Danforth Keyes Bangs fund, . . . . .	408 12
John C. Cutter fund, . . . . .	129 79
William R. Sessions fund, . . . . .	128 99
Alvord Dairy Scholarship fund, . . . . .	453 22
Total, . . . . .	\$4,954 77

I hereby certify that I have this day examined the Massachusetts Agricultural College account, as reported by the treasurer, Fred C. Kenney, for the year ending Nov. 30, 1920. All bonds and investments are as represented in the treasurer's report. All disbursements are properly vouched for, and all cash balances are found to be correct.

CHARLES A. GLEASON,  
Auditor.

JAN. 6, 1921.



## HISTORY OF SPECIAL FUNDS.

## Burnham emergency fund:—

A bequest of \$5,000 from T. O. H. P. Burnham of Boston made without any conditions. The trustees of the College directed that \$1,000 of this fund should be used in the purchase of the Newell land and Goessmann library.

The fund now shows an investment of . . . . \$4,000 00

## Library fund:—

The library of the College at the present time contains 64,-765 volumes. The income from the fund raised by the alumni and others is devoted to its increase, and additions are made from time to time as the needs of the different departments require. Dec. 27, 1883, William Knowlton gave \$2,000; Jan. 1, 1894, Charles L. Flint gave \$1,000; in 1887, Elizur Smith of Lee, Mass., gave \$1,315. These were the largest bequests, and now amount to . . . . . 10,000 00

## Endowed labor fund:—

Gift of a friend of the College in 1901, income of which is to be used for the assistance of needy and deserving students, . . . . . 5,000 00

## Whiting Street scholarship fund:—

Gift of Whiting Street of Northampton, for no special purpose, but to be invested and the income used. This fund is now used exclusively for scholarship, . . . . . 1,000 00

## Hills fund:—

Gift of Leonard M. and Henry F. Hills of Amherst, Mass., in 1867, to establish and maintain a botanic garden, . . 10,000 00

## Mary Robinson fund:—

Gift of Miss Mary Robinson of Medfield, in 1874, for scholarship, . . . . . 1,000 00

## Grinnell prize fund:—

Gift of Hon. Wm. Claflin, to be known as the Grinnell agricultural prize, to be given to the two members of the graduating class who may pass the best oral and written examination in theory and practice of agriculture, given in honor of George B. Grinnell of New York, . . . . 1,000 00

## Gassett scholarship fund:—

Gift of Henry Gassett of Boston, the income to be used for scholarship, . . . . . 1,000 00

## Massachusetts Agricultural College investment fund:—

Investment made by vote of trustees in 1893 to purchase one share of New York Central & Hudson River Railroad stock. The income from this fund has been allowed to accumulate, . . . . . 100 00

## Danforth Keyes Bangs fund:—

Gift of Louisa A. Baker of Amherst, Mass., April 14, 1909,  
the income thereof to be used annually in aiding poor,  
industrious and deserving students to obtain an education  
in said College, . . . . . \$6,000 00

## John C. Cutter fund:—

Gift of Dr. John C. Cutter of Worcester, Mass., an alumnus  
of the College, who died in August, 1909, to be invested  
by the trustees, and the income to be annually used for  
the purchase of books on hygiene, . . . . . 1,000 00

## Alvord dairy scholarship fund:—

Gift of Henry E. Alvord, who was the first instructor in  
military tactics, 1869–71, and a professor of agriculture,  
1885–87, at this institution. The income of this fund is  
to be applied to the support of any worthy student of said  
college, graduate or postgraduate, who may be making  
a specialty of the study of dairy husbandry (broadly  
considered), with the intention of becoming an investi-  
gator, teacher or special practitioner in connection with  
the dairy industry, provided that no benefits arising  
from such fund shall at any time be applied to any person  
who then uses tobacco in any form, or fermented or  
spirituous beverages, or is known to have done so within  
one year next preceding, . . . . . 4,000 00

## William R. Sessions fund:—

In accordance with the request of my deceased wife, Clara  
Markham Sessions, made in her last will, I bequeath to  
the trustees of the Massachusetts Agricultural College,  
Amherst, Mass., the sum of \$5,000, it being the amount  
received by me from the estate of the said Clara Mark-  
ham Sessions. The said \$5,000 to be kept by the said  
trustees a perpetual fund, the income from which shall  
be for the use of the Massachusetts Agricultural College;  
and according to the further request of my deceased wife,  
made in her last will, this is to be known as the William R.  
Sessions fund, and is to be a memorial of William R. Ses-  
sions; and it is my special request that the said trustees  
shall make record of the fact that this fund came from the  
estate of my deceased wife, Clara Markham Sessions, in  
accordance with her request made in her last will, . . . 5,000 00

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\$49,100 00

FRED C. KENNEY,

*Treasurer.*







MASSACHUSETTS  
AGRICULTURAL COLLEGE

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REPORT OF THE PRESIDENT  
AND OTHER OFFICERS OF  
ADMINISTRATION



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# THE M. A. C. BULLETIN AMHERST, MASSACHUSETTS

VOLUME XIV    MARCH, 1922    NUMBER 3

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AGRICULTURAL COLLEGE: JAN., FEB., MARCH, MAY,  
JUNE, SEPT., OCT., NOV. ENTERED AT THE POST  
OFFICE, AMHERST, MASS., AS SECOND CLASS MATTER

## THE FIFTY-NINTH ANNUAL REPORT OF THE MASSACHUSETTS AGRICULTURAL COLLEGE

PART I.—THE REPORT OF THE PRESIDENT  
AND OTHER OFFICERS OF ADMINISTRATION  
FOR THE FISCAL YEAR ENDED NOV. 30, 1921



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PUBLICATION OF THIS DOCUMENT  
APPROVED BY THE  
SUPERVISOR OF ADMINISTRATION.



# The Commonwealth of Massachusetts

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DEPARTMENT OF EDUCATION, BOSTON, Jan. 31, 1922.

*To the Honorable Senate and House of Representatives.*

GENTLEMEN: — In accordance with the provisions of section 8 of chapter 75 of the General Laws, I transmit to you herewith, for the use of the General Court, the annual report of the Massachusetts Agricultural College for the year ending Nov. 30, 1921.

Respectfully yours,

PAYSON SMITH,  
*Commissioner of Education.*



# The Commonwealth of Massachusetts

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MASSACHUSETTS AGRICULTURAL COLLEGE,  
AMHERST, Nov. 30, 1921.

*To the Commissioner of Education.*

SIR: — On behalf of the trustees of the Massachusetts Agricultural College I have the honor to transmit herewith Part I of the fifty-ninth annual report of the trustees, for the fiscal year ended Nov. 30, 1921, this being the report of the president of the college and other officers of administration to the corporation.

Respectfully yours,

EDWARD M. LEWIS,  
*Acting President.*





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## REPORT OF THE PRESIDENT OF THE COLLEGE.

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*Gentlemen of the Corporation.*

On account of the absence of President Butterfield it becomes my duty to present to you the annual report of the President of the Massachusetts Agricultural College for the year ending Nov. 30, 1921, and to transmit with it the annual reports of other administrative officers of the institution.

### **REVIEW OF THE YEAR.**

#### **President Butterfield's Absence.**

In July President Butterfield was invited to become a member of a commission organized by the Board of Foreign Missions of North America to study the educational needs of China. The commission, composed of a number of leading educators of America, was requested to spend from four to five months in making a comprehensive study of the educational needs of China and to prepare a report embodying its conclusions and recommendations. The President, whose vision, national leadership, and ability as an investigator have long been recognized, was asked to join the commission as a specialist in industrial and agricultural education. Your Board granted him a leave of absence for six months, and on August 12 he left Amherst for service on this important commission. He is expected to return in February, 1922.

#### **Change in Trustees.**

The term of Mr. Edmund Mortimer as trustee of the College expired Dec. 31, 1920. Having moved to another State, Mr. Mortimer was not eligible for reappointment, and Governor Cox chose as his successor Mr. Atherton Clark of Boston. Mr. Clark is a son of Ex-President William S. Clark, one of the early and most distinguished presidents of the College. He is a graduate of the College in the class of 1877, and a

prominent business man in Boston. He has been an active leader among the alumni, having served as president of the Associate Alumni and as chairman of the building committee which had charge of the financing and constructing of Memorial Hall. The appointment of Mr. Clark was not only most appropriate but also most acceptable to the many friends and supporters of the College.

### Resignations.

During the year there have been seventeen resignations from the professional staff, twenty-one from the clerical and secretarial staff, and three from other salaried positions. Among these resignations are those of Mr. Charles R. Green, librarian, and Robert J. Sprague, professor of economics and sociology.

Mr. Green came to the College in 1908, and during his administration the library service was organized on a high plane of efficiency. The total number of books was increased four-fold. The second floor of the chapel building was recently fitted as an additional reading and study room, and has proved to be an important addition to the library facilities. The need of a new and adequate library building has been for many years, as you know, very pressing, and during the past few years the demands for such a building have increased tremendously. Partly because of our inability to secure a legislative appropriation for a new library, and partly because of uncertainty relative to salary adjustments recommended by the trustees, Mr. Green felt that it would be the part of wisdom for him to accept a position as librarian of the Jones Library, Inc., of Amherst. He gave thirteen years of excellent service to the College and will be greatly missed. I am sure he carries to his new position the best wishes of his many friends and colleagues on the faculty.

Prof. Robert J. Sprague was head of the Division of the Humanities, and had served the institution since 1911. He organized the Department of Economics and Sociology, and taught practically all of the courses in that important field. In 1920-21 he was on leave of absence to engage in educational work at Rollins College, Florida. He has returned to that work this year. Uncertainty as to the future here was a con-



tributing cause to his withdrawal also. Dr. Sprague was a helpful and inspiring teacher. He rendered a fine service and will be greatly missed by both his colleagues on the faculty and by the students.

### **New Appointments as Department Heads.**

Mr. Henry S. Green has been chosen librarian to succeed Mr. Charles R. Green. Mr. Green is a graduate of Yale University. He received the degree of LL.D. in 1900 from Bethany College; has had a long and successful teaching experience, both at Bethany College and at the University of West Virginia; has served as State Librarian of West Virginia, and for the last four years has been in library work connected with the army.

### **Enrollment of Students.**

*In the Regular Courses.* — This autumn the registration of students in work of collegiate grade is 546, an increase of 40 over 1920. The entering class numbers 162 as compared with 135 in 1920, and 125 in 1919. The number of graduate students is somewhat larger as is also the number enrolled in the sophomore class. There are 13 special students as compared with 23 enrolled a year ago. In the four-year course there are 472 students as compared with 445 enrolled in these courses in 1920. The total number of women students has increased from 37 in 1920 to 48 in 1921; 15 of these entered with the freshman class.

*In the Two-year Course.* — There is a slight increase in the enrollment of students in the two-year course. In 1920 the total was 277, and in 1921 the total is 293. It is gratifying to note that there are nearly as many students enrolled in the second year of the two-year course as entered a year ago. There are 55 students enrolled in the vocational poultry course and unit courses as compared with 69 in 1920. Of the total registration of 348, 14 are women.

*In the Summer School and Other Short Courses.* — The Summer School of 1921 brought to the College as large a number of students as was enrolled in 1920, the Summer School registration being 259. The Winter School enrollment of 1920 showed a substantial reduction over that of 1919.

*Disabled Soldiers as Students.* — During the year the College has continued to co-operate with the Federal Board for Vocational Education (recently taken over by the Veteran's Bureau) in the training of a large number of disabled soldiers and sailors desiring education in agriculture. At the close of the College year 194 men are enrolled at the College under provisions of the contract with the government; 36 of these are enrolled in courses especially organized for the Federal Board men, and the remainder are enrolled in existing courses.

*Total Enrollment.* — The total enrollment at the present time is 894, of whom 546 are enrolled in work of college grade and 348 in the various short courses. During the year the total number of students registering at the College for one course or another, including the classes graduated in June from the four-year and two-year courses, has been approximately 1,500.

### **Salary Increases.**

Following the legislative appropriation for salaries made in the spring of 1921 the trustees of the College presented a schedule for salary increases to the Supervisor of Administration. Some of these were in the nature of the usual normal increases, and some were in order to remedy inequalities which your Board felt had inevitably arisen from time to time in the effort to make fair adjustments between individuals. Although most of them were readily granted *in toto*, there was a number of these requested increases granted only in part. The result of the latter, in my judgment, was rather unfortunate, because the inequalities still remain with us, at least some of them. Due to the inability of the trustees to utilize funds available for salary increases, I am obliged to report that a substantial balance remains unexpended at the end of this fiscal year.

### **Relationships with Other State Departments.**

Because of the seriousness of the situation and its potential danger to the welfare of the institution, I cannot refrain from calling attention again to the restlessness which still continues here, owing to the uncertainty and division of the final authority. That the trustees no longer control, as they formerly

did, or manage the institution, is indeed quite evident. Unless some relief can be found from the present arrangement, unless a definite and clear one replace the indefinite and *divided* one of the present, it does not seem possible that the morale of the College can much longer be maintained on its former high level of efficiency.

### Co-operation of Alumni.

In his report of a year ago President Butterfield referred to the fact that the alumni were rallying to the support of the College as never before. Further evidences of this fact have accumulated during the year. Not only did an unusually large number of alumni return for the semi-centennial celebration in June, but the business session of the alumni held at that time was in many ways an unmistakable expression of the new and the intense interest in the College evidenced by the alumni everywhere to-day. Thorough and comprehensive reports were received from the alumni committees that during the preceding months had been considering the following vital questions: (a) the administrative policy and relations of the College; (b) the question of student life and government; and (c) the question of the course of study. The committee dealing with the latter subject made only a partial report. During the summer and fall months this committee, of which Mr. H. J. Baker, 1911, is chairman, has devoted a large amount of time in the continuation of their inquiry among alumni and others who are in a position to make valuable contributions to this study. The final report of this committee has not yet been submitted.

### War History.

Just prior to the June Commencement there was published the history of the "Massachusetts Agricultural College in the War," the records for which had been compiled by the secretary of the College with much labor and care. The many letters of appreciation and commendation of this history indicate that the time and expense involved in its publication were amply justified.



### **Change in the College Catalogue.**

I wish here to call your attention to a change in the publication of the College catalogue for this year and the reasons therefor.

The College catalogue is desired largely by three distinct groups of readers: first, it is desired by resident students who are interested primarily in the detailed character of the courses of study; second, by prospective students and parents who are especially interested in the entrance requirements, subjects offered, and information concerning expenses, living accommodations, and questions relating to other phases of student life; third, by individuals and institutions that desire a complete record in permanent form of the organizations of the College and the complete list of courses offered each year.

Formerly an edition of from 6,000 to 8,000 copies of the complete catalogue has been issued and has been sent to all groups alike. Believing that two of the groups could be better served otherwise, without increasing the total expense of publication, the following modifications will take the place of the single complete edition of the catalogue.

A relatively small edition of the complete catalogue of 1921-22 will be published; this will be distributed to members of the faculty, to high schools, to other colleges and universities, and to any other individual or institution whose requests can be most satisfactorily met by a complete catalogue. A detailed description of the courses will be printed separately; this will be for distribution among the students. For distribution among prospective students and others inquiring about the educational advantages of the College, an abridged and illustrated catalogue will be published; this will contain certain material printed in the catalogue, such as the requirements for admission, outline of the course of study and general information concerning expenses. The pamphlet will be illustrated by interesting views of the College buildings and campus, and the text will contain further information designed to advise prospective students more fully than does the usual catalogue, concerning the educational advantages and student life at the College.



### Student Labor.

In 1915 the faculty committee on employment, consisting of Professor Sears, Professor Haskell and Treasurer Kenney directed its attention to developing a system whereby, through interviewing applicants for student labor and making inquiries of their parents and others concerning their financial condition, a fairly intelligent estimate might be gained as to the men who should be given consideration in the assignment of work at the dining hall and elsewhere on the campus. Prior to this time there had been no method devised for the satisfactory distribution of positions, and frequently students were given lucrative employment who did not greatly need such assistance. At the same time a number of needy and deserving students were making great sacrifices, and, indeed, undergoing privations in order to remain in College. It not infrequently happened that a student of this type was obliged to leave College because of his inability to secure the labor which would have made it possible for him to continue.

The work of this committee has progressed from year to year; the task of interviewing fifty or sixty men each year and classifying them is in many ways a burdensome one. On the other hand, the results obtained seem fully to justify this necessary expenditure of valuable time. The secretary of the committee has made an analysis of the amounts earned by students during the last College year, and a summary of this study is here given:—

#### *Student Labor, September, 1920, to June, 1921.*

	Number of Students.	Amount earned.
Less than \$50 . . . . .	210	\$2,560 14
Seniors . . . . .	23	\$323 78
Juniors . . . . .	22	427 73
Sophomores . . . . .	30	326 04
Freshmen . . . . .	49	457 35
Two year . . . . .	75	858 91
Miscellaneous . . . . .	11	166 33
\$50 to \$100 . . . . .	24	1,750 02
Seniors . . . . .	8	\$576 02
Juniors . . . . .	7	486 49
Sophomores . . . . .	3	255 15
Freshmen . . . . .	4	315 67
Two year . . . . .	2	116 69

*Student Labor, September, 1920, to June, 1921 — Concluded.*

	Number of Students.	Amount earned.
<b>\$100 to \$200</b>	<b>41</b>	<b>\$6,219 09</b>
Seniors . . . . .	9	\$1,250 45
Juniors . . . . .	7	1,120 97
Sophomores . . . . .	16	2,538 09
Freshmen . . . . .	5	723 50
Two year . . . . .	2	286 05
Miscellaneous . . . . .	2	300 03
<b>Over \$200</b>	<b>65</b>	<b>17,646 83</b>
Seniors . . . . .	23	\$6,327 92
Juniors . . . . .	24	6,697 91
Sophomores . . . . .	8	2,018 26
Freshmen . . . . .	1	239 46
Two year . . . . .	7	1,850 04
Miscellaneous . . . . .	2	513 24
<b>Total</b>	<b>340</b>	<b>28,176 08</b>

**Legislative Appropriations, 1921.**

The trustees asked for special appropriations in the budget of the year for several items, including a chemistry building. An appropriation for this building was favored by the Supervisor of Administration, the joint committee on ways and means, and the House of Representatives. The Senate, however, voted to eliminate this from the budget. The only special appropriations granted, therefore, were \$25,000 for improvements and equipment and \$10,000 for the administration building at the Market-Garden Field Station. For details of the budget, I would call your attention to the budget on page 74.

On account of our failure to get the special appropriations requested, and also on account of the sum allowed for improvements and new equipment, the building operations during the year have been on a minimum basis. The principal improvement was a small addition to the barn for the housing of live stock. The administration building at the Market-Garden Field Station has been completed.

**Memorial Hall.**

Formal recognition should here be made of the gift to the College of the beautiful Memorial Hall erected by the students, alumni, faculty and friends of the College, which was completed and dedicated in June. The building has been transferred to the trustees by the following deed of gift: —

This indenture, made this                      day of                      nineteen hundred and twenty-one, between the Associate Alumni of the Massachusetts Agricultural College, a corporation duly organized (hereinafter called "the donor"), and the Commonwealth of Massachusetts, by

trustees of the State institution, the Massachusetts Agricultural College, acting under and by virtue of chapter 262 of the General Acts of 1918 (hereinafter called "the board of trustees"), Witnesseth:

In consideration of the high regard and feelings of gratitude which the members of the said corporation bear towards said College, and as a memorial to the graduates and students of the College who gave their lives in the struggle for democracy in the World War, and in further consideration of one dollar and other valuable considerations paid by the board of trustees, the receipt whereof is hereby acknowledged, the donor does hereby give, grant, bargain, sell and convey unto the said board of trustees, its successors and assigns, a certain memorial building on the land of the Massachusetts Agricultural College situated in Amherst, in the county of Hampshire and Commonwealth of Massachusetts. The said building to be donated complete and free from all encumbrances.

This indenture is made upon the following terms and conditions: That the board of trustees will accept and maintain the said memorial building in a proper and usable condition for student activities, subject to the rules and regulations of said board, as provided for in the agreement between the donor and said board of trustees appearing in the records of the donor June 19, 1920, and in the records of said board of trustees, January 7, 1921, creating the Board of Management of Memorial Hall, and will insure and keep insured the said memorial building from loss or damage by fire.

*To have and to hold* the granted building, with all the privileges and appurtenances thereto belonging, to the said Commonwealth of Massachusetts, its successors and assigns, to their own use and behoof forever.

*In witness whereof*, the parties to this indenture have hereunto set their hands and seals, the Commonwealth by the Trustees of the Massachusetts Agricultural College, who incur no personal liability by reason of the execution hereof or anything herein contained, except as hereinabove set out, this                      day of                      , nineteen hundred and twenty-one.

THE ASSOCIATE ALUMNI OF THE  
MASSACHUSETTS AGRICULTURAL COLLEGE.

By.....

THE COMMONWEALTH OF MASSACHUSETTS.

By.....

.....

*Trustees of the Massachusetts Agricultural College.*

### **Departments of Undergraduate Instruction.**

Although still somewhat handicapped by the unsettled conditions incident to the necessary reconstruction due to the war, I am glad to say that a reasonable degree of stability has been reached in all departments of the institution. On the other hand, practically every department is suffering from the loss of valuable and experienced teachers who have, during the past three years, resigned to accept more attractive positions elsewhere. Some positions long vacant have been filled during the year. In general, it may be said that the large numbers of two-year students have resulted in the further crowding of quarters, in many cases already insufficient for four-year men. Many departments are also handicapped by limited equipment and by inadequately trained teachers.

All expansion in personnel during the past two years has been limited to the addition of a few instructors in the Divisions of Agriculture and Horticulture.

### **Library.**

Little can be said concerning the work of the library for the past year other than has been reported in former years. The fitting up of the second floor of the library building for reading room purposes has added somewhat to the facilities for study at the library. The library, however, is still most inadequate and unsatisfactory from the standpoint of economy in operation and its use as an educational center for the entire student body. Students and faculty alike feel very keenly the inadequacy of these facilities, and realize the hopelessness of securing satisfactory results from the library so long as existing conditions continue.

### **Infirmary.**

Dr. Marshall, who has general charge of the infirmary, calls attention to the additional problems confronting the institution with respect to proper accommodations for the sick because of the large number of students which we now have, and also because of the fact that women are attending the College in larger numbers than formerly. A suitable infirmary which will provide accommodations for both men and women students seems imperative.



### **Department of Physical Education.**

The work of the Department of Physical Education has continued along the lines already established. The department is now well equipped with respect to instructors, but because we have no gymnasium no indoor work in physical education can be undertaken other than that made possible by basketball.

### **Department of Military Science and Tactics.**

The introduction of the cavalry unit for the R. O. T. C., seems to have been a wise and helpful move. While military drill at this institution cannot now be said to be popular with the students, it is less objectionable than during the past year or two. The number of men electing the advanced work in military drill is small. This number is likely to increase, however, as the natural prejudice against military training now shared by the country at large wears away and the advantages of the instruction becomes clearer to our students.

During the year Col. Richard W. Walker, who for two years had been the Commandant in charge of our military instruction, was transferred to another post, and his position here has been filled by Maj. Frederick E. Shnyder. Associated with Maj. Shnyder are Maj. Herman Kobbe, Capt. Thomas Brady and Capt. James V. V. Shufelt.

### **Semi-Centennial and Commencement.**

The celebration of the Semi-Centennial of the College extended from July, 1920, until June, 1921. The following "Year of Jubilee" meetings were held at the College on the dates specified: —

- June 30–July 2, 1920. Association of Agricultural College Editors.
- Oct. 7–8, 1920. Conference of Women in Agriculture and Country Life.
- Oct. 14–16, 1920. American Civic Association. — Country Planning Conference.
- Oct. 15, 1920. American Country Life Association.
- Oct. 22, 1920. Association of Land Grant Colleges.
- Oct. 30, 1920. Luncheon to Ex-President James C. Greenough.
- April 8–10, 1921. International Association of Agricultural Missions.
- May 15, 1921. Rural Clergymen's Conference.

The final and crowning event of the "Year of Jubilee," of course, was the Commencement in June. The programs of the various events of Commencement are here given:—

**GENERAL PROGRAM, JUNE 10 TO 14, 1921.**

**Friday, June 10, Citizens' Day.**

- 10.00 A.M. Alumni Field: Faculty-Senior baseball game.
- 3.00 P.M. Auditorium Tent: Addresses by Governor CHANNING H. COX, Dr. ARTHUR W. GILBERT, Massachusetts Commissioner of Agriculture, and Hon. HENRY C. WALLACE, Federal Secretary of Agriculture.
- 6.45 P.M. Steps of Stockbridge Hall: Interclass sing.
- 8.00 P.M. Bowker Auditorium: Dramatics—First performance of "John Epps," a historical play of M. A. C. in the days of '71, written by FRANK PRENTICE RAND of the English Department.

**Saturday, June 11, Alumni Day.**

- 9.00 A.M. Memorial Hall: Meeting of Associate Alumni—Address by President BUTTERFIELD to the alumni; report of memorial building committee; general business.
- 1.00 P.M. Auditorium Tent: Alumni dinner.
- 3.00 P.M. Alumni parade and frolic.
- 4.00 P.M. Alumni Field: Baseball game, M. A. C. v. Amherst.
- 7.00 P.M. Green in front of South College: Lawn fête and concert by 104th Regiment Band.
- 9.00 P.M. Fraternity reunions.

**Sunday, June 12, Dedication Day.**

- 10.30 A.M. Auditorium Tent: Semi-Centennial Address and Baccalaureate by President BUTTERFIELD.
- 3.00 P.M. Memorial Hall: Dedication of Memorial Hall.
- 6.00 P.M. Rhododendron Garden: Reception by President and trustees.

**Monday, June 13, Anniversary Day.**

- 8.30 A.M. Dining Hall: Breakfast for alumni "M" men, and former leaders in non-athletics.
- 10.30 A.M. Senior fence: Senior Class Day exercises.
- 1.30 P.M. Junior frolic.
- 2.30 P.M. Auditorium Tent: Anniversary meeting, alumni, students and faculty participating.
- 4.30 P.M. Alumni Field: Freshman-Sophomore baseball game.
- 8.00 P.M. Bowker Auditorium: Dramatics—second performance of "John Epps."

**Tuesday, June 14, Commencement Day.**

- 10.30 A.M. Auditorium Tent: Commencement exercises — Speakers:  
Mr. E. E. THOMPSON, '71, secretary of the class; President  
WINTHROP E. STONE, '82, of Purdue University; Mr.  
J. H. PUTNAM, '94, County Agent for Franklin County,  
Massachusetts; and Dr. PAYSON SMITH, Commissioner of  
Education for Massachusetts.
- 8.00 P.M. Memorial Hall: Sophomore-Senior hop.

**PROGRAM FOR CITIZENS' DAY, JUNE 10.**

Hon. CHARLES A. GLEASON, Vice-President and Chairman,  
Board of Trustees, presiding.

Music.  
Address.

His Excellency Governor CHANNING H. COX.

Music.  
Address.

Dr. ARTHUR W. GILBERT of the Class of 1904,  
State Commissioner of Agriculture.

Music.  
Address.

Hon. HENRY C. WALLACE,  
Secretary of Agriculture.

Music.

Music for this occasion furnished by the Sophomore Quintet, composed  
of —

ROBERT D. FULLER (Leader)	Clarinet.
DONALD G. NOWERS	'Cello.
HARRY C. NORCROSS	Violin.
FRED G. SEARS, Jr.	Violin.
Richard G. Wendell	Piano.

**PROGRAM FOR BACCALAUREATE SUNDAY, JUNE 12.**

- Prelude and Processional.  
Hymn: "Faith of Our Fathers."  
Scripture Reading and Prayer.

Mr. CHARLES H. WHITE of the Class of 1909.

Music.

Semi-Centennial Address and Baccalaureate: "Our College and the  
Common Weal."

President KENYON L. BUTTERFIELD.

- Hymn: "America, the Beautiful."  
Recessional and Postlude.

Music for this occasion furnished by the Sophomore Quintet..

**PROGRAM FOR DEDICATION OF MEMORIAL HALL, JUNE 12.**

President KENYON L. BUTTERFIELD, presiding.

Music.

Address.

Maj.-Gen. WILLIAM M. WRIGHT, U. S. A.  
(Read by Dr. J. B. LINDSEY of the class of 1883.)

Music.

Address.

Dr. JOEL E. GOLDTHWAIT of the Class of 1885.

Dedication Address.

Dean EDWARD M. LEWIS.

Music.

Presentation of the Building to the College.

Mr. EVAN F. RICHARDSON of the Class of 1887,  
President of the Associate Alumni.

Acceptance of the Building in Behalf of the Trustees.

Mr. WILLIAM WHEELER of the Class of 1871.

Hymn: "America."

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Music for this occasion furnished by the Sophomore Quintet.

**PROGRAM FOR ANNIVERSARY DAY, JUNE 13.**

HERBERT J. BAKER of the Class of 1911, Presiding.

Music.

College Orchestra.

Songs.

Led by Glee Club.

Educational Development of M. A. C. in Fifty Years.

Prof. FRANK A. WAUGH, Head of Division of Horticulture;  
Chairman, Committee on Semi-Centennial.

Development of Student Life of M. A. C. in Fifty Years.

Mr. NATHAN W. GILLETTE of the Class of 1921.

Song.

Glee Club Quartette.

Fifty Years of Athletics.

Mr. WILLARD A. MUNSON of the Class of 1905.

Song.

Glee Club.



Work of Alumni at M. A. C. in Fifty Years' Development.

Mr. ALLISTER F. MACDOUGALL of the Class of 1913, Extension  
Professor of Farm Management.

M. A. C. — The College of the Future.

President KENYON L. BUTTERFIELD.

*"Sons of Old Massachusetts."*

**PROGRAM FOR COMMENCEMENT EXERCISES, JUNE 14.**

Music.

Prayer.

Rev. HERBERT J. WHITE of the Class of 1887.

**1871-1921.**

Responses:

For the Commonwealth — Dr. PAYSON SMITH, Commissioner of Education.

For the Land Grant Colleges of the United States — Dr. WINTHROP E. STONE of the Class of 1882, President of Purdue University, Lafayette, Ind.

For the Farmers of Massachusetts — Mr. JOSEPH H. PUTNAM of the Class of 1894, Agricultural Agent for Franklin County.

For the Class of 1871 — Mr. EDGAR E. THOMPSON, Secretary of the Class.

Music.

Conferring of Degrees.

President KENYON L. BUTTERFIELD.

Presentation of Diplomas.

Dr. PAYSON SMITH,  
Commissioner of Education.

Announcement of Prizes and Awards.

Music.

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Music for this occasion furnished by the Sophomore Quintet.

It should be noted that this was essentially an M. A. C. celebration. With one exception all the addresses were made by M. A. C. men. The music for the various programs was furnished by the students of the College. Approximately eight hundred alumni and former students returned for this Old Home Reunion. This is by far the largest number of M. A. C.

alumni and former students ever gathered together at one time. The dedication of the Memorial Hall constituted the principal feature of the program. All the meetings and functions were well attended, and the prevailing opinion was that the fiftieth anniversary of the graduation of the first class of the College, as well as the half century of service by the institution in the interest of agriculture and rural life in the State and Nation, was fittingly and appropriately observed.

On Commencement Day the degree of Bachelor of Science was conferred upon ninety-two men and three women; the degree of Master of Science upon three men; and the degree of Doctor of Philosophy upon one man.

### **The Market-Garden Field Station.**

An increased interest in the work of the Market-Garden Field Station, noted by more visits from market gardeners than in 1920; 600 people in attendance at the annual Field Day on August 3, and a continuous series of requests from various sections of the State and other States as to the progress of the work, all give reason to believe that real service is being rendered to vegetable-growing interests.

The interest and co-operation on the part of the county agents throughout the State has been exceedingly gratifying and helpful in extending the work of the Market-Garden Field Station.

Projects under way were indicated in the last report to the President. To these can be added:—

1. A special study of the new annual sweet clover known as "Hubam," to learn its value as a soil improvement crop for the market vegetable grower.

2. The study being made of Washington asparagus, accepted as the best variety known.

The work of vegetable seed production to stress the opportunity and prove the value of home-grown seed has been of particular interest and value.

The Administration Building, for which an appropriation was made by the Legislature of 1921, has been completed. The completion of this building finishes the original program for construction as drafted in 1915. No major construction is contemplated for the future.

A request has been made for a vegetable storage building to cost about \$2,000, and for fencing to cost about the same amount. The latter is most pressing, for trespassing renders some of the experimental work of little value.

Splendid co-operation has been received from various departments of the College. Work along insect control lines has been badly handicapped due to lack of funds. The work of plant disease control investigation has made good progress.

The best progress of the work awaits needed assistance in both the experimental and extension fields.

### **The Mount Toby Demonstration Forest.**

The Mount Toby Demonstration Forest was acquired to serve as a laboratory for the field work of forestry students in the College, and to exemplify, for all who might be interested, the various practices of forestry.

The forest is most admirably suited to its purpose. Owing to marked variations in soil, exposure, and elevation, it contains within its 750 acres a wide representation of common New England forest types, — white pine, hemlock, hardwoods, and varying mixtures of these. And owing to its very favorable location with respect to markets, its products can be disposed of in large or small quantities down to the last limb. Furthermore, the commanding view from the mountain top and the unspoiled attractiveness of the countryside around have made Mount Toby for many years a pleasure ground for out-of-door people, who are thus brought within reach of its forestry lessons; and the steel fire lookout tower soon to be set up on the summit will bring it still closer to the public.

The Forestry Department of the College, in taking charge of the forest, was faced at the outset with the heavy damage caused by the chestnut blight, and this damage has been until a few months ago the dominant and determining factor in the management. The forest contained not only several fine blocks of pure chestnut, but a great many scattered specimens in mixture with other species; and all were doomed by the disease, for which no remedy has anywhere been found. Year after year all available funds have had to be concentrated on salvaging



dying chestnut, in the form of telephone poles, ties, fence-posts, lumber, and cordwood.

The past year has seen practically the last of the chestnut removed. During the year (1921) there have been cut over 700 telephone poles, 35,000 feet of chestnut plank, and corresponding quantities of smaller chestnut products. With these out of the way it has been possible for the first time to turn to forestry in the ordinarily accepted sense of the word, and to accomplish some tasks that had long been awaiting their turn.

The first of these tasks was a cutting in the pine belt at the foot of the mountain, which removed all pines that were dying or just dead through competition with more vigorous neighboring pines. This operation, without reducing the growing stock, yielded 100,000 board feet at a clear profit of \$6 per thousand, together with 50 cords of limbwood at a clear profit of 25 cents a cord. The second of these jobs was the clearing of gray birch from a 12-acre area, to release a fine undergrowth of pine that would otherwise have died out. The yield was about 100 cords of wood at a net return of around 50 cents a cord; and there was left a splendid young stand of pine freed for vigorous growth. Similar release cuttings have been applied to 10 other scattered acres that were in like need, with similar promise of pure pine stands where there would otherwise have been only a short-lived growth of inferior hardwood; also a block of young pine has been thinned and pruned. These cuttings are of just the sort that should be carried out in woodlots throughout the State, and that seldom are. The costs, returns, and methods are accurately known and recorded, and the results are plainly to be seen. Thus a definite step has been taken toward making the forest a demonstration area of immediate practical value.

In addition to the cuttings just described, considerable work has been done in road maintenance and fire protection. The interior roads have been improved by the blasting of ledges, by grading and filling with gravel, and by the building of culverts and six substantial bridges at brook crossings. A 50-foot strip each side of the main interior roads has been cleared of inflammable material, and a 6-foot strip has been similarly cleared around the entire bounds of the property, to make it easier to keep fire out.



It will probably take a year more to put the forest in first-class condition. The several miles of interior roads must be cleared and drained; the shattered down timber must be salvaged where possible or lopped in the tops so that it may soon decay; old accumulations of slash must be burned; overdense stands must be thinned, weed-trees removed, and open places planted up; old fire lines must be widened, and new ones constructed, with boxes of fire-fighting tools placed at strategic points; and the whole property must be carefully remapped, estimated, and divided into clearly marked areal units for purposes of administration and record keeping.

With these preliminaries attended to, the main work on the forest will be devoted first to the gradual replacement of inferior species with more desirable ones, and then to the cutting year by year of just so much as can be taken without diminishing the total productivity, each harvest to be so managed that a satisfactory new crop shall succeed the old. This work may be conducted in such a way as to produce not only an annual cut of lumber, but an annual yield of scientific and practical knowledge gained from careful experiments in the introduction of new species and in the application of varying methods of planting, tending, and reproducing the forest crop. And all the while the forest may illustrate the helpful relation of publicly owned forest land to the surrounding community, both by providing a recreation ground and by offering winter work for farm labor in the slack season and stabilizing local wood-using industries with a steady and reliable supply of raw materials. The soundest progress of forestry is thought by competent opinion to lie in the direction of small, widely distributed town, city, and State forests. In this progress Mount Toby is particularly well situated to point the way.

**LEGISLATIVE BUDGET, 1922.****For Permanent Improvements.**

*Chemistry Laboratory and Equipment, \$350,000.* — This is the third time that this structure has been asked for, and it has been under discussion for many years. In 1918 the Commission on the Investigation of Agricultural Education reported: "An adequate chemistry laboratory is equally needed. The present chemistry building is one of the oldest, most dilapidated and most unsuitable buildings on the campus." Chemistry is a subject required of every student because it is fundamental in all agricultural work. For the same reason the research work in chemistry demands more space than does any other single branch of investigation. It is estimated that it will require an appropriation of \$350,000 to build and equip a building that will be at all adequate to meet the situation. However, not more than one-third of this amount will be needed during the present fiscal year.

*Improvements at Power Plant, \$80,000.* — The appropriation here requested is to provide for an ash storage bin and for two additional boilers and stokers for the power plant. In order to meet the constantly increasing demand upon the steam boilers, to replace present boilers, some of which are eighteen years old, and to maintain a minimum reserve of boiler capacity for use in case of emergency, our engineer considers it necessary to install two 406-horsepower boilers equipped with stokers. The cost of these items is estimated to be \$35,000. A stoker should be installed in connection with a 200-horsepower boiler already used. The necessary cost of setting these boilers, piping, flue work and other necessary repairs and improvements incident to this installation amounts to approximately \$69,000.

*Laboratory for Horticultural Manufactures, \$50,000.* — The importance of utilizing various by-products of the farm which formerly were wasted, such as fruit and vegetables, was emphasized during the war, and under the direction of Prof. W. W. Chenoweth of this institution farmers came to see whereby this saving could to advantage be made permanent. In order to adequately give instruction in the preservation of fruit and

vegetable products, a new laboratory building is essential. The plans provide for a one-story building of inexpensive construction, which will furnish laboratories for the various phases of this work.

*Improvements at Tillson Farm, \$5,000.* — For a number of years the institution has been developing important research work in connection with poultry husbandry, and it is apparent that valuable results may be obtained by the continuation and expansion of these projects. It is desirable that this experimental work be done at an isolated place. The college owns a farm of about 70 acres located some distance from the main area, and it is proposed to develop this farm as an experimental poultry plant. It will be necessary to build laying houses, a breeding house, an incubator cellar, a feed room and a barn. Considerable fencing must also be done. The total cost will be slightly in excess of \$11,000, but it is thought that \$5,000 will be adequate for the initial work.

*Macadam Road, \$8,000.* — There is no first-class macadam road anywhere on the campus. There are two main approaches to the campus which have heavy traffic by sightseers as well as others. The total length of the main drives on the west campus is approximately one mile. All the coal used by the institution is brought in from the railroad stations, chiefly by automobile truck. That portion of the road which is used for this purpose should be macadamized at once. The distance is approximately 1,750 feet and the estimated cost is \$8,000.

*Purchase of Brooks Farm, \$20,000.* — The erection of certain buildings on the campus during the past twenty years has made a serious encroachment on the field plots used by the Experiment Station. Immediately adjoining the college estate on the north is a farm, the soil of which is a continuation of that now used for Experiment Station purposes. The area comprises 60 acres, and farm buildings. In a recent appraisal by three competent judges \$21,400 was agreed upon as a fair price for this property. This land is now very urgently needed for the purpose indicated, and, looking into the future, it seems absolutely essential that it be available for experimental purposes.



### IS THE COLLEGE ABANDONING AGRICULTURE?

The remainder of this report is an effort to answer as briefly as possible the oft-repeated charge that the College has strayed away from its original purpose and has quite neglected instruction in agriculture. This charge can be easily and completely disproved by any one who will make a thorough and impartial investigation of the facts. Indeed, it can be shown conclusively that agricultural instruction is stressed more by far to-day than ever before, and that the College has less the character of a State college or university than at any time in all its history. It is my purpose to bring some convincing data bearing upon these points to your attention.

The fundamental mistake usually made by those who make this charge is the assumption that these colleges were established for the sole purpose of training boys to become practical farmers and nothing else. Another wrong assumption is that such a narrow purpose was controlling in the minds of those who administered the work of the College in the past as compared with those who are now administering it. Both assumptions have no basis in fact.

The facts clearly prove that the idea of a *liberal* education was originally linked closely with the idea of a technical and scientific training; indeed, a liberal education, based on science, was the basic idea. There was never a thought of a training for a single vocation or a single phase of a vocation in the minds of the statesmen who founded the land-grant institutions. Moreover, the facts prove that a practical and technical training has been increasingly stressed as against the earlier emphasis upon a general scientific education, and that there is taught to-day a maximum of practical and technical subjects as against a minimum of scientific and general subjects in the agricultural colleges.

The agricultural colleges, as you know, were established as the result of the Morrill Land Grant Act of 1862. That act provided for "the endowment, support and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are re-



lated to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.”

It is not necessary to comment on the breadth of this language except to call attention to the fact that it is far, very far, removed from the thought of a college to train boys to become farmers *and nothing else*.

This act was amended through Mr. Morrill's efforts in 1890 to the effect that \$25,000 should be granted to each State “to be applied only to instruction in agriculture, the mechanic arts, the English language and the various branches of mathematical, physical, natural, and economic science, with special reference to their applications in the industries of life and to the facilities for such instruction.”

This amendment narrows the use of the appropriation only to certain subjects, namely, agriculture, English, and applied science. Note that applied science included economic science as far back as thirty years ago.

On these two legislative acts these institutions were based, and the condensed form of them is now printed in the General Laws of the Commonwealth of Massachusetts in these words: “The leading object of the college shall be to teach subjects relating to agriculture and the mechanic arts, so as to promote liberal and practical education. Its curriculum may include other scientific and classical studies and shall include military tactics.”

That is the exact legal language that at this moment in this State defines the purpose of the College; that is, therefore, the definition of purpose that should control all who have a share in guiding its policies and administering its details. Surely no one conversant with the meaning of such language can possibly say these colleges were meant to be merely vocational schools and nothing more. No one in authority anywhere has so interpreted them. Higher institutions, founded upon a high school training, would not be needed to carry out so simple and narrow a purpose as is in the minds of some of our critics.

What was Senator Morrill's interpretation of this language? What did he have in mind when he championed this project

in his earlier and later legislative experience? In discussing the subject before the lower House, Mr. Morrill said:—

It proposed to establish at least one college in every State, upon a sure and perpetual foundation, accessible to all, but especially to the sons of toil, where all the needful sciences for the practical vocations of life shall be taught; where neither the higher graces of the classical studies, nor the military drill of our country now so greatly appreciated, will be entirely ignored, and where agriculture, the foundation of all present and future prosperity, may look for troops of earnest friends, studying its familiar and recondite economics, and at last elevating it to a higher level, where it may fearlessly invoke comparison with the most advanced standard of the world.

In 1872, ten years after the passage of the Land Grant Act, he further said in a debate in the Senate that —

It was a misnomer to call the institutions “agricultural colleges;” they were schools for the benefit of agriculture and the mechanic arts, whose purpose, as he subsequently explained, was to provide a broad education, intended to be sure to reach the agriculturist and to reach all our industrial classes.

And in 1890, twenty-eight years after the passage of the act, he said:—

The most advanced studies were not, it will be remembered, to be excluded from these colleges, and whenever provided with sufficient resources they should be ready to offer all the learning demanded by any portion of the American people, and yet they must not fall short in the branches related to agriculture and the mechanic arts, but must lead in the highest instruction asked for by the industrial classes.

What were the interpretations, or points of view, of the executive heads of M. A. C. concerning the purpose of the College as expressed in the Morrill Land Grant Act? I shall let them speak for themselves.

In the catalogue of 1867, the year of the first entering class, we find President Chadbourne writing thus:—

The object aimed at in the instruction is, first, to make intelligent, thoroughly educated men; and secondly, to make practical agriculturists. This is demanded by the law of Congress donating the lands, which

declares the purpose to be, "to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." It is difficult to see how an agricultural education alone would meet the requirements of this law if such an education were desirable. But any system that attempts to give practical knowledge without first having given a broad scientific basis will succeed only in making skillful artisans, and will not send forth men fitted to improve themselves, or add materially to the advancement of knowledge.

It is proposed that, for the present, at least, the instruction shall consist of two courses; a special course of lectures, exclusively agricultural, to be given every winter, and also a regular four-year course of study that shall give a truly liberal education, — a basis for the active duties of life, which any citizen of a free republic may be called upon to engage in. The College will thus offer the advantages of a professional school in agriculture, and an educational course differing from that in the other colleges of the State, but no less extensive and thorough in its requirements.

Undoubtedly there is a difference of opinion as to what the College should be. In reference to some of our best institutions that have been established for more than a century, there is a marked difference of opinion among their alumni and officers as to the most desirable organization for them now to meet the demands of the present time. As no one can claim to have experience in conducting such an institution as this, it would seem to be the wisest way for all well-wishers of the College to go on as best they can in the light of experience gained in the general work of education, and be ready to adopt such changes as the practical working of the institution shall show to be necessary.

The fear is expressed by some that, if an attempt is made to give a truly liberal education, the students will turn aside from agriculture to other pursuits. Undoubtedly some of them will. If such an education is given in practical science as ought to be given in such an institution, there will be a demand for its students as teachers and in other professions. And it would be an education entirely unworthy of Massachusetts, and contrary to the plain intent of the act of Congress donating the land, if it were so meager in its requirements that the students should be fitted only for one pursuit in life. No surer way could be devised to defeat the very end for which the College was established, than to conduct it on a plan which proclaimed, in theory and practice, that its students were to be kept in ignorance of certain things lest they should be above their calling. No institution can ever succeed on such a plan, and ought not to. It is difficult to see what a student would enter such an institution for. Such views are repugnant to every generous feeling which an educated man ought to possess, contrary to the principles of our institutions, and are not sustained by the present position of the agriculturists of this State. The adoption of such a system would be simply saying to the farmers of Massachusetts that they are tillers of the soil because they



are too ignorant for other pursuits. An entirely different principle has been acted upon in organizing the College. While the student is to be educated, agriculture, which rests upon a knowledge of all the natural sciences, is to be made a means of education. It ought to be so presented that it shall be an inviting pursuit for an educated man. When all its processes are scientifically understood, it will be difficult to point to any business or profession that offers a field of thought more desirable.

The four-year course of study for the first class entering M. A. C. was as follows for the freshman year:—

*First Term.*—Algebra; English Language; Human Anatomy; Botany. Lectures on the Preservation of Health and Methods of Study.

*Second Term.*—Geometry; Drawing; French; General Chemistry and Mineralogy. (Recitations and lectures.)

*Third Term.*—Geometry; Drawing; French; General Zoölogy; Botanical Analysis.

Members of the Freshman Class will be allowed to attend at least one lecture daily of the special course on Agriculture, in such departments as the Faculty shall determine.

And as follows for the senior year:—

*First Term.*—Civil Polity; Intellectual Philosophy; Economic Geology and Mining. Lectures; Law relating to Rural Affairs.

*Second Term.*—Moral Philosophy; Logic; Æsthetics; English Literature. Lectures; Architecture.

*Third Term.*—Special subjects; Reviews.

Seniors attend any lectures of the course. Military Tactics; Declamations; Discussions and Themes during the whole course.

I omit the sophomore and junior years for lack of space merely.

In 1871 President Clark's report includes the following statement:—

The instruction in the languages is intended to qualify the graduates to write and speak English with correctness and effect, and to translate French and German with facility. The scientific course is extensive and thorough, and as practical as possible. Every student has the opportunity of becoming a good chemist, a skillful surveyor, and a civil engineer. At the same time, every science is taught with constant reference to its applications to agriculture and the wants of the farmer.



In 1874 President Clark further said:—

It is the earnest desire of the trustees and faculty that the College shall especially promote the agricultural interests of the Commonwealth, but it may be well to remind those who demand that every graduate shall be a farmer, that the act of incorporation passed by the Legislature of 1863 does not intimate that the accomplishment of this result is the mission of the institution. The language is as follows: "the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the *several* pursuits and professions of life."

It should therefore be distinctly understood that, while the most effort and the largest expense have been bestowed upon the agricultural department, the authorities of the College do not propose to require its graduates to engage in any particular business for life. The opportunity for acquiring a valuable education is offered to all the young men of the country, and if the farmers desire to have their sons trained in the best manner to pursue intelligently the profession of their fathers, let them patronize the College. If, however, there are others who wish to have their sons enjoy the advantages of scientific and literary culture under circumstances calculated to interest them in practical affairs, and to prepare them for a life of industry and usefulness, they have equal rights with the farmers, and shall have equally cordial welcome.

In 1883 President Chadbourne again writes:—

The course of study has been so far modified as to introduce more instruction in the structure of the English language, rhetoric and history. The study of French and German heretofore required has been made optional, and the time of recitations so arranged that each student can study both languages if he so elects.

The work of the College has been most efficiently done. The improvement of the students in their studies and in that good order and gentlemanly deportment so desirable in college, has been highly satisfactory.

It is plainly evident that the people of the State, as a whole, have not understood the provisions here made for the education of the young men of Massachusetts. When committees from the Legislature and others have visited the institution and become acquainted with its organization, its means of instruction, and its actual work, the College has proved its own best advocate. To make the College and its work better known to all the people of the State, we ask a careful consideration of the course of study and of the reports of various departments. We also feel justified in once more calling the attention of the Legislature and the people of the State to the founding and organization of this institution as well as to its present condition.

The grant of land and land-scrip for founding agricultural colleges was made by the general government in 1862. The Civil War had brought out with great clearness the elements of national strength,—varied production in agriculture and the mechanic arts, and a citizen soldiery well trained in the art of war. To secure all these in their greatest perfection was the aim of the bill for establishing “industrial colleges” in the various loyal States. Whatever mistakes may have been made in the organization and management of these institutions, no fault can be charged home to the original bill. It was evidently a wise measure, and suggested an outline of organization and management that has not as yet been improved upon. Its significant words are as follows: “The endowment, support and maintenance of at least one college where the *leading object* shall be, without excluding scientific and classical studies, and including military tactics, to teach such branches of learning as are *related* to agriculture and the mechanical arts, in such manner as the Legislatures of the States may respectively prescribe, in order to promote the *liberal* and *practical* education of the industrial classes in the several pursuits and professions of life.” No branch of learning peculiar to the old colleges was to be necessarily excluded; but the new colleges were to push on to the practical application of the sciences they taught, and they were to train all their students as defenders of their country against domestic rebellion or foreign invasion. In a word, they were to educate their students as *men* and as *American citizens*. The rank of the education given is *liberal*, the term applied to the education given by the highest institutions then known. It was to be so broad as to fit men for the “several pursuits and professions of life.” The object of these colleges was to obliterate the supposed superiority of the so-called “learned professions” by securing a “liberal,” that is, the highest, education for those who chose industrial pursuits, thus lifting agriculture and the mechanic arts from the plane of mere routine labor to the dignity of learned professions, founded upon scientific knowledge and allied to, or connected with, those branches of learning essential for a broad and generous culture of the whole man. Many who have attempted the management of these colleges, as well as many who have criticised them, have apparently overlooked the broad and generous plan upon which they were founded. It is doubtful if they will ever accomplish the great work for which they were intended, until their original purpose is so fully and constantly recognized and carried out by judicious, painstaking work that the currents of education shall be once fairly turned toward these new channels. When once fairly turned, that they will continue to flow can no more be doubted than we can doubt the success of any natural process when not artificially obstructed. An education that “gives boys what they need to daily use when they become men” commends itself as rational and practical. All true education should aim at this. And this certainly is the idea that is embodied in the bill founding the industrial colleges of the several States. The provisions of this

bill were accepted by Massachusetts. One-third of the funds received from the United States was given to the Institute of Technology in Boston for the promotion of the mechanic arts, and two-thirds were devoted to founding a college at Amherst for the special work of agriculture. By the gift to the Institute of Technology, the Agricultural College has been freed from much labor in building up a mechanical department, — a fact that has been lost sight of by some, — and is left free to carry out the idea of a college making agriculture the leading idea, while it secures rigid training in military tactics and provides such a range of studies in science, literature, and philosophy, as shall, in the words of the bill, promote “liberal education.”

The course of study aims to do what the original bill declared should be done, — give a practical knowledge of agriculture and horticulture, and at the same time so educate the *man* that the students from the Agricultural College shall not be mere artisans, having learned a trade or business and nothing more, but be liberally educated, so that, as farmers, they shall rank in intellectual training with those who choose what have heretofore been called the “learned professions.” It is plain that farming will never take its true place, nor farmers have the influence, in the government of our land which they ought to have until they take their place with those in other professions, not only as men of power and practical ability, but as men of learning and culture. Those who claim that the farmer’s life forbids this result have never yet fully appreciated the farm as a place for study and thought, as well as a place for labor.

The course of study in 1884 was divided into two parts which were as follows: —

*Course of Study and Training, January, 1884.*

FRESHMAN YEAR.

*Scientific and Literary.*

First term:  
 Algebra.  
 Botany.  
 French.  
 Second term:  
 Geometry.  
 History.  
 Botany.  
 Lessons in Language.  
 Freehand Drawing.  
 French.  
 Third term:  
 Botany.  
 Geometry.  
 French.

*Scientific and Agricultural.*

First term:  
 Algebra.  
 Botany.  
 AGRICULTURE.  
 Second term:  
 Geometry.  
 History.  
 Botany.  
 Lessons in Language.  
 Freehand Drawing.  
 AGRICULTURE.  
 Third term:  
 Geometry.  
 Botany.  
 AGRICULTURE.

## SOPHOMORE YEAR.

*Scientific and Literary.*

## First term:

Geometry and Trigonometry.

Botany.

Chemistry.

German.

## Second term:

Trigonometry.

Chemistry.

Physiology.

Mechanical Drawing.

German.

## Third term:

Surveying.

Botany.

Zoölogy.

German.

*Scientific and Agricultural.*

## First term:

Geometry and Trigonometry.

Botany.

Chemistry.

AGRICULTURE.

## Second term:

Trigonometry.

Chemistry.

Physiology.

Mechanical Drawing.

AGRICULTURE.

## Third term:

Surveying.

Botany.

Zoölogy.

AGRICULTURE.

HORTICULTURE.

MARKET GARDENING.

## JUNIOR YEAR.

## First term:

Mechanics.

English Literature.

Constitutional History.

## Second term:

Physics.

English Literature.

Chemistry.

Latin.

## Third term:

Physics.

Chemistry.

Latin.

## First term:

Mechanics.

English Literature.

AGRICULTURE; ENTOMOLOGY.

## Second term:

Physics.

English Literature.

Chemistry.

AGRICULTURAL DEBATE.

• ARBORICULTURE.

CARE OF NURSERIES.

## Third term:

Physics.

Chemistry.

Roads and Railroads.

## SENIOR YEAR.

## First term:

Bookkeeping.

Chemistry.

Mental Science.

Mineralogy.

## Second term:

Organic Chemistry.

Political Economy.

Microscopy.

## Third term:

Moral Science.

Geology.

History of Philosophy.

## First term:

Bookkeeping.

Chemistry.

Mental Science.

Mineralogy.

## Second term:

Organic Chemistry.

Political Economy.

AGRICULTURE.

## Third term:

Moral Science.

Geology.

AGRICULTURE.



Fourteen years later (in 1898) President Goodell who had been connected with the College from the beginning writes:—

The academic course of four years is divided between nine departments, with the following allotment of hours to the different studies:—

English and literature . . . . .	533
Other languages . . . . .	507
Mathematics and drawing . . . . .	784
Chemistry and physics . . . . .	833
Botany . . . . .	519
Entomology, zoölogy, and physiology . . . . .	559
Economic law and history . . . . .	381
Military science and practice . . . . .	496
Agriculture in general . . . . .	479
Horticulture . . . . .	377
Veterinary . . . . .	185
Geology and astronomy . . . . .	370
Total . . . . .	6,104

This statement reveals, then, only 787 hours out of 6,104 offered in so-called purely practical agricultural lines, while English offered 533, other languages 507, and economic law and history 381, or a total of 1,421 in strictly humane studies. Add the mathematics and drawing, 784, to this total and you have 2,205, or one-third of the whole. The remainder, you will note (with the exception of military drill) is pure and applied science.

The foregoing excerpts and data clearly reveal the drift of the discussion and its results during the first thirty years of the life of the College. They are typical, not exceptional; they tell the whole story. There was clearly conceived no narrow or limited vocational aim. These men considered it their business to educate as well as to train; to attend to the man as well as to the job. The catalogues for years openly announced that "the College offers a free education to any American student of good character who may fulfill the requirements for admission."

In 1905-06, at the close of President Goodell's administration, the curriculum shows no marked change in content over that of 1898. We find that of the 160 semester credits required for graduation, every student was forced to take 16 credits in English, 9 credits in French, 7 credits in German and 8 credits in

history, economics, and government, or a total of 39. At the same time, he was compelled to take only 14 in what the critic would term practical agricultural subjects. In other words, every student had to spend one-quarter of his time in cultural subjects (one-tenth in English, one-tenth in German and French, and one-twentieth in history, etc.), and only one-eleventh in all practical agricultural subjects. These figures express the minimum required of every student. On the other hand, the most that he could possibly take by election in purely cultural subjects was 51 credits, and the most he could possibly take in practical subjects was 43. This was the absolute maximum possible offered in 1905-06, the year before President Butterfield took charge. In that year, let it be noted, Latin was offered as a four-hour credit for the senior year, — yes, Latin.

I would gladly invite any one to make a careful comparison of the curriculum of 1905-06 with the curriculum of the present day. He will now find no Latin (to his surprise, probably), only one-half as much English, less than one-half as much foreign language, only one professor teaching economics and government, and only one-tenth of a student's total time required in "other-than-agricultural" studies. He would find no justification whatever, therefore, for saying that the College had "expanded away from" agriculture, or towards a so-called State university, during the past fifteen years.

In 1911 President Butterfield defined the purpose of the College in the following terms: —

The chief purpose of the College is to prepare men and women for the agricultural vocations. In this statement the term "agricultural" is used in the broadest sense. Courses are offered which give efficiency in various practical pursuits, such as general farming, landscape gardening, forestry and arboriculture. Students also qualify for positions in institutions designed for investigation in the many sciences underlying the great agricultural industry, for teaching in agricultural colleges and high schools, and for business occupations having connection with the farm and needing expert service.

Contrast this statement with any definition of purpose to be found in any previous report and let him who can say that it is relatively broad. The fact is that it is comparatively

narrow, and marks a decided change only in stressing the practical and vocational aims of the College.

In 1917 Governor Samuel W. McCall appointed a commission to investigate the College. This commission consisted of Ex-President Clark L. Seelye of Smith College, Northampton, Commissioner of Education Payson Smith, Supervisor of Administration Charles E. Burbank, Mr. William Whiting of Holyoke, a business man vitally interested in farming, and Mr. Warren Jewett of Worcester, an eminently practical and successful farmer. This commission made a full and unanimous report which was highly creditable to the College. In regard to the curriculum this report said:—

The land-grant colleges were primarily established to promote the study of agriculture by the most advanced and scientific methods of instruction. In their courses of study one naturally expects that science will occupy the most prominent place, and that it should be taught by men well qualified for their work. The Massachusetts Agricultural College meets this expectation.

There are at present 228 courses in agriculture and the cognate sciences, and only 96 courses in mathematics and the so-called humanities. In the first year 48 courses are given in agriculture and mathematics, and only 18 in the humanities. In the second year 6 courses are required in the humanities, and 54 in agriculture and cognate sciences. After the second year a major course can be elected in one of 17 departments; during the last year 75 per cent of the students elected major courses in agriculture and horticulture. There is no major course in the humanities, and only one-quarter of the student's time is required<sup>1</sup> in these studies. Three quarters of the students are giving three-fourths of their time to distinctively agricultural subjects. Ten times as many courses are given in junior and senior years in agriculture as were given ten years ago, and more agricultural studies have been introduced in the first and second years than ever before.<sup>2</sup>

There has been no corresponding increase in humanistic studies. Of the faculty 54 teachers are engaged in instruction in agriculture and the cognate sciences, and 14 teachers in the humanities and mathematics. Members of the faculty and representative students alike testify that there is a prevailing tendency among the undergraduates to elect studies according to their supposed commercial values, and to neglect those studies which aim to strengthen and cultivate the mind. While there is a fair showing of humanistic electives in the curriculum, most of them are

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<sup>1</sup> This is an error; only one-tenth is actually required.

<sup>2</sup> This paragraph is evidently based on term courses offered, and does not differentiate between separate and continuing courses.



not required as they are in the Massachusetts Institute of Technology and in other colleges, and only a few of the students elect them.

While the State in its acceptance of the provisions of the Morrill Act is bound to give special instruction in agriculture, it is not less bound by the language of the act to give a liberal education as an integral part of its distinctive work, and not to neglect or relegate to subordinate places those studies which experience has shown are best fitted to nourish and strengthen the faculties of the mind and which will enable men to do better work, whatever that work may be.

In closing, I cannot refrain from quoting the following paragraph from the report of the committee on agriculture of the State Grange presented in Springfield at the annual meeting last month:—

We earnestly desire to see our Agricultural College maintain its position as one of the leading agricultural colleges in America. We believe that the courses of instruction should be as thorough, as broad and as liberal as those of any other college on the ground that the farmer desires as good an education as any other citizen. We especially protest against the tendency in certain quarters to restrict the teaching of such subjects as science, history, economics, etc.,—subjects which are of vital importance to the agricultural industry and to life on the farm.

I cannot refrain, either, from expressing a personal opinion to the effect that in order to deal fairly with the boys of Massachusetts who will hereafter attend the College we must give them not less but more of those subjects that prepare for life and citizenship. The meager amount we now require is nothing short of tragic. No one will contend that one-tenth of a boy's time during the four precious years of college is sufficient for his education as a citizen and as a man. Yet that is all that a large number of our students receive to-day. Will any one say we are not sacrificing the man on the job for the job;—"the man on the farm," as Emerson said, "for the farmer"? Does not the practical result of our present curriculum "carry us away" from the real educational intent of the Morrill Land Grant Act? I believe it does, and I believe further, that, without losing one iota of the excellent "practical" content which is now included in the curriculum, it is our immediate and imperative duty to march swiftly forward and give a sound educa-



tion as well as a good vocational training to every one of our students.

In this brief discussion I think I have shown conclusively that there is no truth whatever in the assertion that the College has abandoned agriculture and magnified "other things." The truth is there is more agriculture taught to-day than ever before, and less, at least 50 per cent less, of "other things" required than ever before.

EDWARD MORGAN LEWIS,

*Acting President.*

## REPORTS OF OTHER ADMINISTRATIVE OFFICERS.

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### **Report of the Dean.**

The duties of the dean's office this year have been divided between myself and Assistant Dean Machmer.

Professor Machmer has had charge of the scholarship of the freshman class, of the dean's Saturday reports, of the meetings of freshman and sophomore class teachers, and of a good part of the difficult and time-consuming matter of absences and excuses. This work he carried on admirably, together with the innumerable personal conferences necessary to keep the boys up to their work by encouragement and sympathy.

My work was concerned with the other classes, with disciplinary matters, and with the reviewing of the bothersome and delinquent cases. A large amount of time also was spent in consideration of the course of study and of such matters as the admission of superior graduates of county agricultural schools and of agricultural departments of high schools. Since Christmas, 1920, I have kept office hours at the rooms of the Department of Education, State House, Boston, every Thursday. In the mornings I have frequently addressed high school assemblies in regard to the opportunities in agriculture and the work of the College. Sixteen high schools were visited in this way. The office hours were usually quite busy with callers of all descriptions. I was able to give first-hand information to a large number who would have had either to travel to Amherst or to correspond back and forth at some length with us at Amherst.

I believe this experiment justifies the practice. Indeed, it is quite necessary in order to have the College tie up effectively with the Department of Education. There are questions of adjustment and policy arising constantly which make a personal interview most desirable. I believe that as the Boston arrangement is more generally known it will save a great deal

of correspondence and make it possible for us to explain matters to an increasing number of people in a much more satisfactory way than by letter.

During the past year we lost the faithful services of Mrs. Mary I. Shores who had been our chief clerk for seven years. Her loss was a great one to the work of our office, for she took care of the innumerable details with great fidelity and had learned to handle the students in a friendly and sympathetic way. Many letters of sympathy came to us from former students in regard to their appreciation of Mrs. Shores. She was ever faithful, ever cheerful, and radiated good-will and a spirit of service wherever she happened to be. It will be difficult to find any one to take her place.

During the past year, also, the dean's office tried to carry some of the work of the registrar's office during the absence of Professor Hasbrouck. Much of this burden was carried gladly and efficiently by Professor Machmer. It necessarily added a real burden to one who was already carrying a good share of the work of the dean's office.

I feel that the important work of absences and of the scholarship of the two lower classes is now in good hands. With the help of student advisers of his choice Professor Machmer will keep the work of the average student well supervised. I hardly know how this important administrative problem can be better met unless we are ready to spend more money in salaries for special supervisors. The work of next year should be still stronger in this respect, and more of the boys saved from the results of carelessness and discouragement.

In regard to this work I beg leave to incorporate in my report a few paragraphs from the assistant dean's report to me.

This year I had associated with me in this work (that of freshmen advisers) Professors Parker and Rand. Both these men did very creditable service in spite of the fact that they were at the same time carrying heavy teaching schedules.

The work requires tact, patience, and sympathy, and cannot be reduced to a simple formula or set of rules. Students must be dealt with individually, for the most part. The adviser must be sought after because he is trustworthy, resourceful, and helpful. His work ought to grow more effective and valuable with each class he fathers. I believe this advisory work very much worth while, and hope the time is near at

hand when the personnel of the freshman advisers will be less subject to change.

The scholarship situation is still unsatisfactory. While the number of failures has not been large, the desire for real study is not gaining as we might wish. I see some relief along three or four general lines: (1) Limitation of the number of laboratory credits which can be counted towards a degree. At present some students in the upper classes are carrying a schedule made up very largely of laboratory courses. They have very little work to do outside of scheduled hours and their influence does not make for good study habits of freshmen, who are bound to get the wrong ideas of college requirements. (2) There is an opportunity to improve the scholastic tenor through a closer co-operation of freshmen instructors. With the heavy schedule freshmen are required to carry, each department should know pretty definitely the requirements and standards of the other departments. Only in this way can assignments and responsibilities be properly and justly gauged. This fault can be corrected through more frequent teachers' meetings during the fall term. (3) There must be fewer outside demands early in the students' career in college. Horseplay, rushing, and meetings of a doubtful value must be eliminated. (4) Classes should begin the first day, if at all possible, which means that textbooks are ordered so that students may secure them before the time scheduled for the first recitation period in any particular subject. To insure prompt starting of class exercises, textbooks to be used and first assignments might be posted on recitation room doors, or even in the recitation room itself.

It seems to me that it might be well for us to make a little closer study of the methods employed by freshman instructors. I am convinced that any freshman instructor should be first of all a strong teacher with sufficient training, of course, to command the proper respect of the students.

EDWARD M. LEWIS,

*Dean.*

### **Report of the Director of the Experiment Station.**

A brief summarization of the work of the year just closed shows the following as its most salient points:—

1. A continuation of the fine spirit of co-operation mentioned in my last annual report. This has been evident not only between men of the station staff and of the Extension Service, but likewise between the station and the resident teaching staff. In both cases assistance and advice have been given without stint, on request. Such a spirit is needed in order to insure the fullest effectiveness of institutional service.



2. Continued development and organization on the basis of the project system. In addition to this, strict analyses have been made of many existing lines of work, in an attempt to place the station on the most productive and economical plane possible.

3. The institution of weekly Experiment Station seminars, designed to bring to bear on station work the full knowledge and experience of the institution as a whole. The attendance at these seminars and the interest exhibited have been encouraging.

4. A rather marked application of results of investigational work to problems of the field, orchard, and farm. This was particularly noteworthy in the case of the following individual projects: —

(a) *Pomology Project No. 2, "Study of Tree Characters of Fruit Varieties."* — This project was started eight years ago under the Adams fund by Dr. Shaw. Work has progressed to such an extent that a method has been developed whereby purity of nursery stock when examined in the period of full leaf growth may be determined with a very fair degree of accuracy. This fact has led to the organization of a nursery certification plan, operated through the agency of the Massachusetts Fruit Growers' Association. Up to date its application is confined to nurseries lying within the bounds of the State of Massachusetts. If it continues to be as successful as the first year's experience indicates, there is no doubt that the scope of the work will be enlarged.

(b) *Botany Project No. 14, "Control of Tobacco Wildfire."* — This work became necessary through the indications of widely distributed infection seen in the seed beds of last spring. Results have been very encouraging, have been incorporated in a published bulletin, and promise to give to our tobacco growers a satisfactory means of control.

(c) *Botany Project No. 10, "Apple Disease Control Investigations."* — Through the co-operation of fruit growers in the eastern apple section, it was possible for the station to undertake work on apple scab. The experimental plots in bearing orchards were supplied by the co-operating fruit growers, with a probable ultimate loss to themselves as individuals. Trans-

portation costs and labor costs, other than of our staff members, were likewise met by the fruit growers. The companies interested in the sale of machinery and likewise of spray materials were of great assistance in securing the necessary equipment and supplies. The work of the first season, although necessarily incomplete, indicates that control of this destructive fungus is easily possible.

(d) *Plant and Animal Chemistry Project No. 5, "Chemistry of Arsenical Insecticides."* — Information on this subject has been collected over a series of years, with lately an enlargement in the field of fungicides. At the earnest request of fruit growers, Messrs. Holland, Bourne, and Anderson were assigned to the task of bringing together the scattered material in the form of a bulletin, which was published under the title "Insecticides and Fungicides for Farm and Orchard Crops in Massachusetts." Fruit growers all over the country have recognized this bulletin as a real addition to their working knowledge of these materials.

(e) *Plant and Animal Chemistry Project No. 11, "Determining the Chemical Composition, Digestibility, and Feeding Value of Kiln Dried Apple Pomace."* — Final report on this work is now in press. It is economically important in that it points the way toward a probably economical method of utilization of a home-produced source of animal food, ordinarily largely wasted.

(f) *Plant and Animal Chemistry Project, "An Investigation of the Solubility Effect of Ammonium Sulfate on the Soil of Field A."* — This work as carried on under the leadership of Professor Morse is of national significance owing to the fact that sulfate of ammonia is now the most important single source of fertilizer nitrogen.

In addition, mention should be made of the organization by the Extension Service, but under the leadership of Dr. Franklin in charge of the Cranberry Station, of a series of schools for cranberry bog foremen. The plant of the Cranberry Station has been placed at the disposal of the Extension Service for this work. From the institutional standpoint this dual utilization of research equipment is significant.

5. Continued handicap to the fullest service of the station brought about by the lack of publication funds. In this con-

nection, however, I desire to go on record as appreciating to the full the excellent service accorded the Experiment Station by the State printers.

6. Increasing difficulty due to shortage of land, with consequent danger of too great dependence upon laboratory data unchecked by field experience.

#### APPRENTICESHIP IN AGRICULTURAL RESEARCH.

Among the changes of the year which give rise to thought is the withdrawal from the institution of two men, occupying almost key positions, for the purpose of continuing their research work in the service of commercial agricultural industries. These men were Dr. G. H. Chapman, who resigned to undertake service with the Connecticut Valley Tobacco Improvement Association, and Mr. C. L. Beals, who left research work in animal nutrition as carried on here at the Experiment Station to take up research work in dairy manufactures for the Sheffield Farms Company. In both cases the opportunity for service was apparently increased, and likewise the financial rewards accorded the work.

The withdrawal of these two men has caused serious interruption of the work on which they were engaged. Yet the fact that commercial agricultural industries are coming to realize the value of research is encouraging. The further fact that they are capitalizing for the benefit of the industry which they represent the knowledge and experience gained by apprenticeship in research is a real cause for gratification. So numerous and important are the problems awaiting solution in the field of production, as well as in all other fields of agricultural endeavor, even including the problem of utilization of food in the home, that it has long been apparent that certain parts of the work must be left to organized industry. Therefore, while regretting the withdrawal of these two men, I must take this occasion to point out to you a too seldom appreciated or realized function of the Experiment Station, — to give apprenticeship in research in order that both the industries purveying to agriculture and those depending on agriculture may secure the type of research service which is needed. It is the function of the College and the Graduate School to train men; but it



is the function of the Experiment Station to give to these men the experience without which they cannot hope to fill important positions in industries relating to agriculture.

#### NEEDS OF THE EXPERIMENT STATION.

The two great needs of the Experiment Station at the present time may be listed as more land and greater man power. Regarding the first, I need only refer you to my last annual report, stating the present conditions under which the Experiment Station is working, and the causes which have brought these about. This part of the subject I must dismiss with a single statement that not until the land needs of the Experiment Station are met will the station be of fullest service to the people of the Commonwealth.

Regarding the need for additional man power, first attention should be given to those existing departments, already organized and equipped, in which production is curtailed through lack of sufficient assistance. Clear separation should be made between such requests and requests which contemplate entirely new departmental organizations. The positions needed for the former purpose are as follows:—

1. *Research Professor of Agronomy.*—For a number of years this position has been combined with that of the Director of the Experiment Station. It seems impossible, however, to give to the administrative work of the station the time and thought which it needs, and at the same time keep abreast of the times in the study of fundamental problems of crop production. The increase in the overhead cost of maintenance, owing to the employment of such an officer, will not be large. The value of work of this kind to productive agriculture is apparent to all.

2. *Laboratory Assistant in Pomology.*—In productive orcharding Massachusetts has recently made great strides. At no distant date it is expected that the State will be self-supporting in apple production, and may, in fact, have a surplus for export. The Department of Pomology is now so organized as to admit of very thoroughgoing work in this particular field. The new assistant is needed in order to make fully productive the knowledge and experience of men now in the department.



3. *Assistant Research Professor of Vegetable Gardening at the Market-Garden Field Station.* — The work at the Field Station is now well under way, but the recording and study of accumulating data have been found time-consuming in the extreme. For experimental work on the many problems which must be faced in commercial vegetable growing, this additional research worker is needed. His appointment will not increase materially the maintenance charges at the Field Station.

4. *Investigator in Plant Pathology*, to be located at the Market-Garden Field Station, and

5. *Investigator in Economic Entomology*, to be located at the same place. Owing partly to differences in climate brought about by proximity to the seacoast, problems in the control of the enemies of vegetation as met in the eastern part of the State differ from those faced at the home station.

In addition to the foregoing I must point out that an Extension worker in the Department of Veterinary Science is sorely needed. His duties would be to organize on an Extension basis certain work now being done by the Experiment Station in avian pathology. Until such time as this Extension worker can be secured, the research men of this department cannot concentrate on the work for which they are primarily engaged.

It should also be noted that the fine equipment of the Department of Microbiology of the Experiment Station is not now fully utilized owing to lack of man power. The subjects being studied by this department are basic and fundamental. At least one additional assistant research professor is needed in order that the department may continue studies initiated during the war on conservation and preservation of food products.

Owing to the present depressed business conditions, I will make no mention in this place of other departments standing in need of research service.

#### THE CLERICAL STAFF.

The work of the station is handicapped to a great degree through lack of sufficient clerical service, and likewise through the lack of labor-saving computing machinery. This is particularly the case in the Department of Agricultural Economics, in which naturally a large number of statistical studies must

be made. The output of this department may be greatly increased by the investment of funds in the machinery mentioned, and the employment of competent clerical assistance. Similar to a degree is the situation in the Department of Poultry Husbandry, in which experimental data are accumulating more rapidly than they can be studied in an interpretative way. To allow such a state of affairs to continue is an invitation to failure. The only present remedy is to require our research men to spend their time in clerical work rather than that for which they are better trained and more productively employed.

### REGULATIVE WORK.

Through State law, four different regulatory services are vested in the Experiment Station as executive agency. These are the fertilizer control, the feed control, the inspection of dairy glassware and examination of milk testers, and the poultry disease elimination law. The sum total of the appropriations is \$25,050.

There have been no changes from previous practice in the feed control as carried on in the past year. Funds are insufficient for carrying out all the provisions of the feed control law, but aside from this, work is progressing in its usual efficient way. Work under the fertilizer control law has likewise progressed in the usual way, the only change worthy of note being further study of method of presentation of results, and a definite policy looking towards division of the subject-matter, with more frequent reports than previously, but each one of a limited scope.

With the increased appropriation given at the legislative session of 1920-21 for the support of the poultry disease elimination law has come the opportunity for increased activity and better organization. With the employment of three permanent assistants in place of two temporary assistants, the work is now on a sounder and more thoroughgoing basis than has heretofore been possible. Likewise it is now so organized as to attempt to clean up certain sections of the State, in the hope that after a reasonable number of years distribution of the disease will be so reduced as to make further work unnecessary.

SIDNEY B. HASKELL,  
*Director of the Experiment Station.*

### **Report of the Director of the Extension Service.**

The report of the Extension Service for the past year will be confined to discussion of but a few outstanding factors in the work, leaving statistical data and detailed comment for the full report which will be submitted to the Governor, in accordance with congressional requirement as set forth in the Smith-Lever Act.

#### **CAREFUL PLANNING HAS RESULTED IN MORE GENERAL ACCEPTANCE OF IMPROVED METHODS.**

The Extension Work of the past year has been characterized by more carefully defined projects and plans of work, more intensive efforts in fewer fields, more work with groups and less with individuals, more careful appraisal of values resulting from time and money spent, and, most important of all, more farmers and home-makers teaching in their localities by means of co-operative demonstrations. Our work is based on the conviction that farmers and home-makers, with adequate support of county agents and specialists, are the best Extension teachers, and are, in the main, best qualified to determine the subjects in which teaching is most needed. The task of the Extension Service therefore becomes increasingly one of finding the most successful men in the business of farming, and women in the business of home-making, assisting them to perfect their practices, training them in methods of informal teaching, and organizing the attention of the community to them and their demonstrations. It is also noted that such teaching is effective proportionately as communities have themselves determined, in consultation with the county staffs, what demonstrations were needed, and from such discussions have decided to support a program of their own making. It is hardly too much to predict that next year will see almost the entire Extension program built on the analysis of community needs by the men and women most affected, guided always by the counsel of the county and College Extension workers, and involving the teaching efforts of hundreds of men, women, boys, and girls.

These elements indicate the magnitude and importance of Extension work. It is not a program predetermined by paid



agents and superimposed on the State; it is an intelligent and democratic effort of the average citizens in our communities to effect changes toward better farm and home practice, with resultant prosperity, opportunity, and happiness. The effort is to get general adoption of the methods which have proved most successful, and which are already being followed by the more progressive. It is evident that no paid staff could be large enough or uniformly acceptable enough to accomplish this by the direct teaching of all farmers. The time and abilities of the College and county staffs must be given to training demonstrators and creating nuclei of sound practice in all parts of the State. The quickness of ultimate acceptance of their practices will come in direct proportion to the number and effectiveness of the co-operating demonstrators. Probably it is safe to say that no funds expended by the State give such far-reaching dividends in education as those used in support of this co-operative Extension system.

#### STAFF CHANGES FEWER THAN LAST YEAR.

The last annual report of the Director of the Extension Service closed with the following:—

Looking forward to the new year our principal need is for men and women of experience and capacity who can take up the work interrupted by resignations, and who can be sufficiently supported to enable their continuance with us for more than a brief time.

It is pleasing to report that this need has in part been met. Only five resignations, involving three positions, are to be reported in the professional staff, and the clerical staff has been quite constant. No changes have occurred in the staff of the county agricultural agents; only two in the staff of county club agents; and nine in the staff of home demonstration agents.

It is in the latter field, with three State leaders in service during the year, and with nine resignations of home demonstration agents, that serious disturbance to work has occurred. To offset this a most encouraging factor is noted in the determination of the women in the counties that work shall continue, and in a greater effort on their part in undertaking the necessary tasks of volunteer and unpaid teaching.



It is also worthy of note that relations with other State and county agencies are cordial and co-operative. Every effort is being made to define programs of work and discuss possible overlapping of efforts with these other agencies. It is increasingly evident that Smith-Hughes, or vocational work, and Smith-Lever, or Extension work, occupy separate fields, with only a slight marginal overlapping; also that in function there should be the closest co-operation and frequent interchanges of service between these two staffs.

#### RESULTS OF REDUCED APPROPRIATIONS.

The State appropriation for Extension work for 1921 was 12.8 per cent less than that for the year 1920. Not only were our State funds reduced, but our Federal funds were decreased automatically by the new census. As a result, we have been obliged to continue to leave five former positions unfilled, employ none of the workers urgently needed in some of the newer fields, keep all our traveling staff at home from four to six weeks, retard the development of our correspondence courses, withdraw from the field of exhibits at the fall fairs, reduce the scope of our Summer Farmers' Week, and curtail work in many minor details. As a result of this economy we have finished the year with a balance of \$2.97.

At present our ability to render effective service to the people of the State is seriously crippled. For the preparation of Extension material and the rendering of specialist service in the fields of rural engineering, animal and poultry diseases, plant diseases, insect pests, floriculture, forestry, and household management we have to depend on resident teaching and the Experiment Station staffs, already overloaded, or decline the opportunity altogether. Persistent demands in these fields indicate the need of Extension specialists. It is not our belief that multiplication of specialists in a single field is either desirable or justifiable; one good specialist in each field should suffice to prepare the material, train and support our county agents and co-operating demonstrations, and lead the Extension work in his or her field. It is futile, however, to discuss any enlargement of staff unless adequate maintenance funds are given to allow such staff members as we have to work effectively.

### NEED FOR PERMISSION TO USE REVENUES AS CIRCULATING FUNDS.

A part of this difficulty would be overcome if the Extension Service were allowed the use of its revenues as circulating funds. A much wider use of our published material would be possible and the increased service could be made self-supporting. Illustrative material to support demonstrations could be made and used in much larger quantities, without increased cost to the State; the educational camps during the summer could be greatly increased and put on a self-supporting basis; the landscape work with small towns and communities could be doubled in volume; a self-supporting film library of agricultural material could be built up; exhibits could be again prepared and furnished at cost to the organizations desiring them; and in such special fields as poultry disease identification and prophylaxis the staff could be increased or decreased according to need, with reduced cost to the State. The Commonwealth is now limiting the fullest productivity of its funds when materials worth using can be produced in limited quantities only, and cannot be further produced for sale to those who would pay for them. It seems most unfortunate that the College is unable because of these legislative restrictions, to give the people of the State an educational service for which they are willing to pay.

### PRINCIPAL NEEDS.

The principal needs of the Extension Service are adequate maintenance funds to make effective the work of such staff as we have, and legislation to permit the use of revenues in certain activities as revolving funds. I omit emphasis this year on the need of new specialists in fields where calls are pressing, as indicated earlier in this report.

JOHN D. WILLARD,  
*Director of the Extension Service.*

### Report of the Director of the Graduate School.

The Graduate School has many problems which vitally influence it. For reasons which need not be mentioned, it is best that they be taken up one at a time. In this report the writer would like to consider the fundamental or basic as it pertains to agriculture and agricultural education of graduate grade.

#### GENERAL.

It is commonly accepted that professions, vocations, or callings of any nature require different subject-matter, and, to a limited extent, different training for preparation. While subject-matter must vary widely to meet the purposes, training, which is more of a common element running through all subjects, may not vary so much.

In the case of the ministry applied work is found in the theological seminary, while the general basis and cultural courses in college precede the seminary courses. With the law there is a very similar arrangement, — the law studies are given in a law school following a general collegiate course. Medicine is drifting in the same direction, so that the best medical schools at the present time call for collegiate training of four years, and even specify some particular subject requirements. Engineering has not gone quite so far, but in reality is fostering much the same method of education. While there are short-cut possibilities, the results are so much in favor of the general collegiate training followed by specific professional or vocational training that the only objections raised are time and expense. Can agriculture, in many respects a much more gigantic profession than any, do less? It will doubtless for many years to come have to provide education for all grades and all types of individuals, but ought this essential profession and industry neglect its growth and its future possibilities, when already the human family has been made to appreciate its limitations for supplying food?

At this moment let it be understood the writer is not dealing with farm labor, "recipe" or artisan farmers, or with any other set of individuals working in agriculture, who, through choice



or unfortunate conditions, have elected to be automata, routine performers, or mechanical human entities, and who simply learn to do a thing and then work because society so ordains. They too deserve every consideration. Every profession has this type of man, — the ministry, medicine, law, and engineering, as well as many others, but the advancement of the profession and its contribution to society cannot be said to lie with these classes. Doubtless the self-claimed agent as the anointed of God, the community "wiseacre" who dispenses law to his neighbor without an actual knowledge of it, the grandmother panacean physician who does not hesitate to take the responsibility for all community diagnoses and treatments in care of all ailments, and the pseudo-engineer who imposes himself upon every automobilist or farmer as a heaven-born mechanical and electrical genius have their place in maintaining the equilibrium of society and satisfying its whims, as a drag to a ship which should not proceed too fast among dangerous shoals. They are so ignorant that they are not aware of it, and not for a minute do they doubt their wisdom. Society as a unit or taken as a whole cannot be much in advance of this average stage, otherwise such assumptions would not be tolerated.

Agriculture labors under many disadvantages. It can use workers of the lowliest order and every grade to the highest order. Comments, therefore, bearing upon the professional features of agriculture are confused because they are not defined by restricted applications. Agriculture, too, is so big that no mind can encompass the entire expanse; accordingly, specialization has a tendency to make of it a battlefield for factions, each faction — whether farmers, pseudo-farmers, business men, bankers, politicians, statesmen, professional men, teachers, or investigators — thinking its approach the only safe and sane approach, and its solutions for the problems of agriculture the only proved answers. To partisans in agriculture, likewise to factions, and especially to the wiseacres, the panacean individuals, to the self-anointed of God, and to the pseudo-types who are no nearer agriculture than the mountain top is to the plain, permit it to be said that human limitations are only exceeded by ignorance. Agriculture has depths untouched



and expanses unexplored. Agriculture has no truly thought policies (scientific theories) or business policies because of its many reaches and the paucity in its strictly scientific attempts. Agriculture suffers from its magnitude because the men occupied with its advancement cannot stop to discover its depths and have to spread themselves so thinly over its surface that they have no time to observe details. Agriculture is crying for more men who are so highly trained that, no matter in what division of labor they find themselves, they will not only appreciate agriculture and its difficulties, but will contribute results of value in their particular niche.

In surveying and interpreting agriculture comprehensively there are three grand divisions: the manufacturing or productive end, the managing, sales, or commercial aspect, and the social phase. Agriculture therefore becomes technical and scientific, economic and sociological.

With this setting it may be possible to promulgate a consideration of the basic education in agriculture for the preparation of a man who can contribute to agricultural progress or advancement.

#### THE FUNDAMENTAL OR BASIC DEVELOPMENT IN AGRICULTURAL EDUCATION.

In order to outline and define any position effectively in agricultural education, it seems necessary to mention the old and much-discussed division in education, — cultural and utilitarian. Since our study is mainly one of the utilitarian, it is very desirable that an attempt at least be made to describe what is meant by cultural, in which we may not all agree.

*The Cultural in Education.* — Culture includes man's capacity for sympathy and appreciation, — sympathy as a reaction which results from similar experiences or feelings; and appreciation as a consequence of actual knowledge of man and his accomplishments, together with the great objective world as a background. From this it follows that a cultured man must be truly in sympathy with *all* of his fellow men and appreciate their interests, their motives, and their actions. Culture, therefore, reaches into the arts, the sciences, literature, history, economics, business, politics — in fact, it assumes an acquaint-

ance with all branches of knowledge, with all activities of men, and with all the finer feelings of their souls.

It appears in men in different degrees as does the utilitarian. Perhaps it may be safely said that these two objects of education should be happily blended. Pertinently may it be added, in a negative sense: An education without idealism, without a motive beyond the acquiring of a sordid dollar, without the translation of effort into terms of something other than bargaining, and without an endeavor to understand those agencies which have been utilized to raise man out of his morbid animal self to realms of pure enjoyment and improvement, cannot be said to be cultural.

#### THE FUNDAMENTAL AND BASIC IN AGRICULTURAL EDUCATION AS INTERPRETED MAINLY FROM THE UTILITARIAN VIEWPOINT.

The principal function of a Graduate School in an agricultural college is to prepare men to master the problems of agriculture from the side of production, of commerce, and of society *in an agricultural atmosphere*. Men thus prepared must be able to solve the problems satisfactorily and not dawdle over them because of lack of training and understanding. The limitations in training and education should never be recognized as an excuse, although there may be many other extraneous causes for inefficiency. This statement applies to investigations, to teaching, and to expert services in the many lines of agriculture.

In preparing young men for such tasks, no element seems more important than a properly conceived foundation, — a basis which removes as many restrictions to action as possible and which serves as a starting point. That the products resulting from a truly basic training and from an education without basic training differ in their capacity for efficiency in those lines of action for which preparation has been made, if properly judged, there can be not the slightest doubt.

The inherent value of such training is ascribed to the following reasons: —

1. Growth and unimpeded action by the human agent are dependent on it.

2. Agriculture advances by what is found in it, and it takes its position in the world by or on account of these intrinsic values, thus acquiring tone, place, and attraction through real merit.

Formal education in agriculture has to deal with two classes of fundamental subjects: —

1. Such basic subjects as are primary and more or less commonly important to all studies.

2. Such subjects as are restricted and are only specifically basic to limited study ranges and even to single subjects.

From this arrangement it is at once gathered that certain subjects may stand by themselves, isolated or more or less unrelated, while at the other extreme very little can be gained without passing through a long series of preparatory and developmental subjects. Then there are all grades of subject requirements existing between these two extremes. Agriculture is concerned with all grades or types of basic study. To put them in a single cast, or to base conclusions upon any one or several of them, may be, from the very nature of the case, very misleading and unsound.

Any scheme that may be offered will be faulty, but an approach may be attempted. Too many factors, both known and unknown, enter in, and these known factors cannot be presented in this report; in fact, a very extensive and exhaustive treatment is called for here. My purpose, under the circumstances, will be suggestive, approximating the true conditions as nearly as feasible.

Before offering the specific scheme, it will be only just to say emphatically that a man trained for efficiency, and efficiency only, having no other objective in mind, can never breathe the breath of life into agriculture in a soulful manner. There should accompany the efficiency ideal the cultural with its spiritual interpretations. Even then the cultural will fall *far*, *far* short because it is so narrowly bounded.

The basic or fundamental from the utilitarian standpoint cannot be brought out forcefully unless there is an analysis along a single channel to make clear the concept advanced. This will be done by subjects now available in College.



## GROUP I. GENERALLY AND ESSENTIALLY FUNDAMENTAL.

*English.*

Spoken — written (spelling, reading, writing, composition).

The medium of thought-transmission for English-speaking peoples. Accuracy in thought-transmission is dependent upon accuracy in language and standardization.

*French and German.*

The more proficient the student is in reading, writing, and speaking, the more valuable is the language.

These languages, when acquired, will extend the values of English from 50 to 100 per cent in knowledge and efficiency.

*Mathematics.*

Arithmetic, algebra, geometry, trigonometry, analytical geometry, calculus.

Mathematics is the mechanism of quantity, direction, space, and time which enters into every measurement, calculation, and estimate. Every problem of life which is considered seriously is interwoven with this mechanism. "Conterminous with space and coeval with time is the kingdom of mathematics; within this range her dominion is supreme; otherwise than according to her order nothing can exist, nothing takes place in contradiction to her laws."

*Physics and Chemistry.*

Nature of matter, reactions of matter, energy, heat, light, electricity, sound.

The laws of matter and force, the understanding of material nature and the universe, and the direction of concrete existence focus in physics and chemistry.

## GROUP II. PERTINENTLY FUNDAMENTAL.

*Biology.*

Botany, entomology, microbiology, zoölogy; life, growth, food, change, diseases.

The morphology and systematic study of living forms and their physiology. Factors which condition life make for growth, control, and extinction. Health, nourishment, protection, and material happiness find their origin here.

*Geology.*

The earth, its genesis, its structure, its forces, its changes.

This subject involves the preceding subjects and composes them in the interpretation of our mother earth.



## GROUP III. ISSUES AND APPLICATIONS.

*Class 1. Applied Sciences.* — Mathematics, physics, chemistry, microbiology, botany, entomology, zoölogy, pathology, veterinary science.

*Class 2. Technical Vocations.* — Agronomy, animal husbandry, dairy husbandry, poultry husbandry, pomology, market gardening, floriculture, horticultural manufactures, landscape gardening, farm management, rural engineering.

These are basically the same: class 1 enters class 2 for the definite purpose of scientific efficiency, and class 2 leads to a very definitely evolved goal. Both classes find their energizing values in Groups I and II.

## GROUP IV. THE HUMAN OR SOCIAL COMPLEX.

Literature, history, governments, economics, education, sociology, art, etc.

Cultural and applied, subjective and objective (somewhat) in their approach, essential to intercourse and expressive of society, these subjects become truly issues with some basic values, and should be objectively founded and spiritually exploited. Much force is contributed to this group by social contacts throughout life, and much of the training emanating from them may be and is obtained beyond school or college walls.

## SOME SPECIFIC CONSIDERATIONS.

There is a wide difference between a student fundamentally trained and one without such training. Likewise the difference between one trained wholly from the utilitarian standpoint and one possessing the values of cultural training is conspicuous. The latter, however, enters into our considerations only incidentally, and will not be illustrated.

Students in a class without fundamental training when asked certain questions of everyday importance will display answers shooting in every direction as a loose lot of skyrockets set off without direction or control. On the other hand, students who have had genuine basic training, will, by a process of direct utilization of laws, principles or policies, and facts, confine their reasoning within established limitations. This has wide application not only in the practices of agriculture but within every walk of life. In spite of the contention of very, very practical men that they want only practical things, which are usually unrelated, promulgated in our educational system, they themselves — these very, very practical men — are constantly

employing policies unconsciously which, if they were analyzed, would be found responsible for their success and generally limited activities. They will discuss them with you if they are drawn out in the right way. They themselves are under the spell of what they attempt to condemn. Basic training gives *well-established thought-policies* and *act-policies* for the guidance of students and of men. Failure most frequently results from incapacity to relate thoughts and actions to established laws, principles, or policies.

Ask a class of untrained students why sugar beets with a high content of cane sugar will not grow and produce sugar if covered over with a thick layer of straw, the replies will be impertinent, irrelevant hearsay, unintelligible, haphazard, indiscriminate, and indifferent. Ask the same question of a class of students basicaly trained, and the answers will proceed cautiously and rationally. In the first place, their answers will be restricted within certain limitations. Within the limitations the factors of growth appear one by one in their minds, and are weighed against the conditions named in the question. When each factor has been carefully and critically reviewed and a result secured, they then put these results together in a reply covering the question. Their minds operate by analysis and synthesis in the light of a knowledge of the facts available. If every factor can be subjected to their operating mental process, and carefully adapted, their answers cannot be far from wrong. Specific and detailed information enters into their consideration in the same manner as in the case of a successful contractor. They have acquired a knowledge of the relation of sunlight, of carbon dioxide, and water to the sugar beet with its sugar formation; the need of oxygen, the influence of moisture and evaporation, not only to the beet plant but to the fertility of the soil; the relation of the roots of the beet plant to the needs of nutrition; the elements essential to nutrition, and the changes that take place in the plant through the agency of chlorophyll and protoplasm. In short, the entire range of plant growth as applied to the sugar beet, with especial reference to its growth and production of sugar, becomes the basis for the answer given; in other terms, a familiar knowledge of botany, physics, chemistry, microbiology, and mathematics

may and does consciously and unconsciously influence the character of the answer, particularly if considered intimately and quantitatively.

The same class of problems, of course, with different subjects, confronts every man, whether he be a banker, a statesman, a politician, a merchant, a manufacturer, a skilled workman, or a common laborer. Not only are his problems the problems of his vocation, profession, or business, but they are the problems of living — of his relation to society, to State, and to the Nation. Is the man to solve his problems with impulse and spontaneity, with haphazardness and indiscrimination, and without basic training leading to solution, or is he to solve them in the light of established facts and rational inquiry? Shall we train students to be simply human tools, or shall we strive to make of men intelligent workers with capacity to spiritualize their efforts? Is it the function of the Agricultural College and the Graduate School to prepare the artisan type of man for agriculture, or strive to train a man to be a *man* who can assist in making agriculture a real profession and a real industry rather than a mere trade without incentive other than pecuniary returns, and who can spiritualize agriculture into attractiveness?

CHARLES E. MARSHALL,

*Director of the Graduate School.*

### **Report of the Director of Short Courses.**

Under Short Course administration the following schools and courses were offered during 1921: —

(1) The Two-Year Course in Practical Agriculture, (2) the Ten Weeks' Winter School, (3) the Summer School, (4) two Vocational Poultry Courses, one starting in September and the other in January, (5) the School of Rural Home Life, and (6) Unit Courses for disabled veterans, sent to this College by the Veterans' Bureau, for instruction in English, arithmetic, and agricultural and horticultural subjects.

The number enrolled in Short Courses this year was approximately the same as for 1920, as may be seen from the following table: —

	1918.	1919.	1920.	1921.
Two-Year Course . . . . .	37	238	288	293
Ten Weeks' Winter School . . . . .	91	63	112	83
Summer School . . . . .	68	238	322	353
School for Country Clergymen . . . . .	—	—	—	19
Vocational Poultry Course . . . . .	5	13	19	26

That the student body is comparatively mature is shown by the tables giving the age of students enrolled in the Two-Year Course in 1920-21.

AGE (YEARS).	1920.		1921.	
	Number.	Per Cent.	Number.	Per Cent.
17 . . . . .	19	6.7	15	5.4
18 . . . . .	33	11.3	25	8.3
19 . . . . .	34	12.0	43	14.3
20 . . . . .	36	13.0	40	13.3
21 . . . . .	26	9.0	24	9.9
22 . . . . .	24	8.0	17	5.8
23 . . . . .	19	7.0	17	5.8
24 . . . . .	14	5.0	14	4.6
25 and over . . . . .	75	28.0	98	32.6
	280	100.0	293	100.0

It was found necessary to reorganize the Two-Year Course. Under the old plan of one general course, with few electives, many students were taking subjects in which they were not interested. Under the new plan there are seven groups of electives, having for their purpose the preparation of students for specific vocations.

The following are the seven groups now available to the students in the Two-Year Course: animal husbandry, poultry husbandry, dairy manufactures, general horticulture, pomology, floriculture, and vegetable gardening.

The work of reorganization was done by the several departments and divisions in co-operation with the Director of Short



Courses. The reorganized course was then submitted to the President for final action. The reorganization of the course seems to have met the approval of both the faculty and the student body.

No modification has been made in the organization of either the Summer School or the Winter School.

*Housing.* — We have reached practically our maximum of service to the State in resident instruction in the Short Courses, until some provision is made for the housing of part of the student body on the campus. During the regular year, from September to June, the most practical time for offering Short Courses, students who are here throughout the year have secured practically all the desirable rooms near the College. The result is that the more mature students who come in for the Winter School find it necessary to go a long way from the College to secure rooms. It is not advisable to encourage students to come here for the winter session unless they can be comfortably housed. The solution of this problem lies in the building of a dormitory for the housing of a part of the regular four-year student body, thus making more rooms available for rental.

*Future Developments.* — In the further development of Short Courses, the need for specialized instruction to groups of men and women actually engaged in some particular farm occupation will have to be recognized. The Division of Horticulture, under the leadership of Prof. Frank A. Waugh, is organizing such a specialized course this year in co-operation with the New England Nurserymen's Association and the Massachusetts Nurserymen's Association. Students who take this special course for nurserymen are required to have already had practical experience before entering. The course is limited to twenty-five students.

*Service of the College in the Rehabilitation of Disabled Veterans.* — This College was one of the first agricultural institutions to undertake rehabilitation work for disabled veterans of the World War. At this institution the Unit Courses for veterans who had not had a common school education were first organized. These Unit Courses included elementary courses in English, arithmetic, poultry, dairying, soils and crops, rural

engineering, animal husbandry, pomology, general horticulture, vegetable gardening, and floriculture. The plans developed here were utilized in other schools and colleges throughout the country. It was necessary to provide these special courses for the veterans who had not had a common school education, because at the time they were provided there were no prevocational schools to give elementary education in English and arithmetic. During the past three years many prevocational schools have been organized so that disabled men may secure training in English and arithmetic in these schools. I am recommending, therefore, that the Unit Courses in this institution be discontinued after June 30, 1922. During the three years we have carried on the work of rehabilitation, approximately 500 disabled men have been enrolled in the College.

*Supervision of Farm Practice and Employment.* — The supervision of students in the Two-Year Course, during the six months they are required to take farm experience, is under the able direction of Mr. Paul W. Viets. Mr. Viets has worked out an excellent plan of supervision during the farm practice period. The record he keeps of the students' work is such that he can give definite and reliable information to any employer.

JOHN PHELAN,  
*Director of Short Courses.*

## TABLES AND STATISTICS.

TABLE I. — *Resignations.*

POSITION.	NAME.
Library assistant . . . . .	Florence Archibald.
Stenographer, Department of Rural Home Life . . . . .	May G. Arthur.
Matron, women's dormitory . . . . .	Mrs. Jessie Bacharach.
Clerk, Department of Microbiology . . . . .	Mrs. Celena M. Baxter.
Clerk, Extension Service . . . . .	Mrs. Carolyn E. Butterworth.
Field agent . . . . .	George M. Campbell.
Research professor of botany . . . . .	George H. Chapman.
Instructor in mathematics . . . . .	Francis P. Clark.
Clerk, Department of Microbiology and Graduate School . . . . .	Elizabeth Coleman.
Supervisor, home demonstration projects . . . . .	Laura Comstock.
Stenographer, Division of Agriculture . . . . .	Irene Crutch.
Instructor in entomology . . . . .	William L. Dowd.
Honorary director of the Graduate School . . . . .	Charles H. Fernald. <sup>1</sup>
Librarian . . . . .	Charles R. Green.
Supervisor of Extension schools and exhibits . . . . .	Robert D. Hawley.
Clerk, Department of Physical Education . . . . .	E. Franklin Holland.
Stenographer, President's office . . . . .	Mary E. Horton.
Curator, Department of Botany . . . . .	Marguerite G. Ickis.
Stenographer, President's office . . . . .	Ruth Leban.
Stenographer, Division of Agriculture . . . . .	Aline J. Legare.
Stenographer, treasurer's office . . . . .	Marion B. Macarty.
Stenographer, Experiment Station . . . . .	Rebecca L. Mellor.
Investigator in chemistry . . . . .	Anne C. Messer.
Library assistant . . . . .	Katherine Middleton.
Stenographer, Extension Service . . . . .	Doris Millett.
Clerk, treasurer's office . . . . .	Mrs. Jessie A. Neill.
Instructor in microbiology . . . . .	James M. Neill.
Professor of poultry husbandry . . . . .	Loyal F. Payne.
Extension assistant professor of landscape gardening . . . . .	William E. Philbrick.
Clerk, Short Courses . . . . .	Mildred Pierpont.

<sup>1</sup> Died Feb. 22, 1921.

TABLE I. — *Resignations* — Concluded.

POSITION.	Name.
Private secretary, Division of Rural Social Science . . . . .	Helen M. Rand.
Assistant professor of entomology . . . . .	William S. Regan. <sup>1</sup>
Assistant supervisor, State home demonstration projects . . . . .	Marie Sayles.
Clerk, dean's office . . . . .	Mrs. Mary I. Shore. <sup>2</sup>
Clerk, Extension Service . . . . .	Sadie Shores.
Stenographer, Department of Dairying . . . . .	Clara Smith.
Stenographer, President's office . . . . .	Elsie M. Smith.
Stenographer, Department of Agricultural Economics . . . . .	Mary A. Smith.
Professor of economics and sociology . . . . .	Robert J. Sprague.
Instructor in home economics . . . . .	Mrs. Julia G. Strahan.
Instructor in physics . . . . .	Alfred L. Tower.
Instructor in dairying . . . . .	Glen E. Upton.
Foreman, Department of Floriculture . . . . .	James Whiting.

<sup>1</sup> Resignation to take effect Dec. 31, 1921.<sup>2</sup> Died Jan. 20, 1921.TABLE II. — *New Appointments.*A. *In the Academic Departments.*

POSITION.	Name.	Degrees.
Instructor in physics . . . . .	George W. Alderman . . . . .	B. A., Williams College, 1921.
Instructor in microbiology . . . . .	Roy C. Avery . . . . .	B.Sc., Connecticut Agricultural College, 1914.
Instructor in English . . . . .	Carl M. Bogholt . . . . .	B.Sc., Massachusetts Agricultural College, 1921.
Instructor in physical education . . . . .	Llewellyn L. Derby . . . . .	— — —
Assistant professor of agronomy . . . . .	Wallace C. Forbush <sup>1</sup> . . . . .	B.Sc., Massachusetts Agricultural College, 1913.
Instructor in poultry husbandry . . . . .	Earl A. Garde <sup>1</sup> . . . . .	B.Sc., Massachusetts Agricultural College, 1919.
Instructor in microbiology . . . . .	Mary E. M. Garvey <sup>1</sup> . . . . .	B.Sc., Massachusetts Agricultural College, 1920.
Assistant professor of animal husbandry . . . . .	Guy V. Glatfelter . . . . .	B.Sc., Pennsylvania State College, 1919; M.Sc., Iowa State College, 1920.
Instructor in home economics . . . . .	Olga Grizzle . . . . .	B.Sc., Washington State College, 1914; M.Sc., Washington State College, 1919.
Instructor in vegetable gardening . . . . .	Harvey F. Jenkins <sup>1</sup> . . . . .	B.Sc., New Hampshire College, 1917.
Instructor in agronomy . . . . .	Marshall O. Lanphear . . . . .	B.Sc., Massachusetts Agricultural College, 1918.
Instructor in agricultural economics . . . . .	John J. Maginnis . . . . .	B.Sc., Massachusetts Agricultural College, 1920.
Instructor in physical education . . . . .	Elton J. Mansell . . . . .	B.Sc., Massachusetts Agricultural College, 1921.
Assistant professor of agronomy . . . . .	Charles A. Michels . . . . .	B.Sc., North Dakota Agricultural College, 1909; M.Sc., University of Wisconsin, 1912.

<sup>1</sup> Temporary.



TABLE II. — *New Appointments* — Continued.A. *In the Academic Departments* — Concluded.

POSITION.	Name.	Degrees.
Instructor in dairying . . .	Harlow L. Pendleton .	B.Sc., Massachusetts Agricultural College, 1915.
Assistant professor in beekeeping .	Norman E. Phillips .	B.Sc., Allegheny College and University of Pennsylvania, 1916.
Instructor in mathematics . . .	Wayland R. Porter .	B.Sc., Carnegie Institute of Technology, 1920.
Assistant professor of horticulture .	Roland W. Rogers .	B.Sc., Massachusetts Agricultural College, 1917.
Professor of poultry husbandry . .	William C. Sanctuary .	B.Sc., Massachusetts Agricultural College, 1912.
Instructor in dairying . . .	Richard W. Smith .	B.Sc., Massachusetts Agricultural College, 1921.
Instructor in French . . .	Paul E. Thissell .	A.B., Tufts College, 1921.
Supervisor of placement training .	Paul W. Viets .	- - -
Assistant professor of landscape gardening.	Joseph F. Whitney .	B.Sc., Massachusetts Agricultural College, 1917; M.L.A., Harvard University, 1921.

B. *In the Experiment Station.*

Assistant research professor of chemistry.	John G. Archibald <sup>1</sup> .	B.Sc., Toronto University, 1916.
Investigator in chemistry . . .	Charles O. Dunbar .	B.Sc., Massachusetts Agricultural College, 1921.
Investigator in pomology . . .	Arthur P. French .	B.Sc., Ohio State University, 1921.
Curator in botany . . .	Anna M. Wallace .	A.B., Smith College, 1913; M.A., Smith College, 1921.

C. *In the Control Service.*

Collector of blood samples, poultry disease elimination.	Ray A. Carter <sup>1</sup> . . .	Massachusetts Agricultural College Short Course.
Specialist in charge of poultry disease elimination.	Oliver S. Flint . . .	B.Sc., Massachusetts Agricultural College, 1917.
Laboratory assistant, poultry disease elimination.	Ann Smith . . .	- - -

D. *In the Extension Service.*

Extension professor of agronomy .	John B. Abbott <sup>1</sup> . . .	B.Sc., University of Vermont; M.Sc., Purdue University.
Extension professor of animal husbandry.	Clifford J. Fawcett . .	B.Sc., Ohio State University, 1915.
State home demonstration agent .	Mrs. Harriet H. Haynes <sup>1</sup>	B.Sc., Teachers' College, 1914.
Assistant State club leader . . .	Dorothy W. Murdock .	Framingham State Normal School, Massachusetts.
State leader of home demonstration agents.	Lucile W. Reynolds .	B.Sc., University of Wisconsin, 1921.

<sup>1</sup> Temporary.

TABLE II. — *New Appointments* — Concluded.*E. Miscellaneous.*

POSITION.	Name.	Degrees.
Librarian . . . . .	Henry S. Green . . .	A.B., Yale University, 1879; LL.D., Bethany College, 1900.
Foreman, Department of Floriculture.	Samuel C. Hubbard . .	— — —
Field agent . . . . .	Richard A. Mellen . .	B.Sc., Massachusetts Agricultural College, 1921.
Matron, women's dormitory . .	Mrs. Marie E. White . .	— — —

*F. In the Clerical Staff.*

POSITION.	Name.
Stenographer, treasurer's office . . . . .	Mrs. Charlotte E. Abramson.
Stenographer, Extension Service . . . . .	Mrs. Teresa M. Binner.
Stenographer, Department of Dairying . . . . .	Genevieve M. Burrington.
Clerk, Extension Service . . . . .	Mrs. Carolyn Butterworth.
Stenographer, Department of Rural Home Life . . . . .	Mrs. Ethel L. Carrier.
Stenographer, Division of Agriculture . . . . .	Irene Chandler.
Clerk, Department of Microbiology and Graduate School . . . . .	Elizabeth Coleman.
Clerk, Extension Service . . . . .	Helen R. Connor. <sup>1</sup>
Clerk, Experiment Station . . . . .	Margaret Eppler.
Clerk, dean's office . . . . .	Mary A. Evans.
Library assistant . . . . .	Ethel A. Green.
Private secretary, Graduate School . . . . .	Elizabeth Hallowell.
Stenographer, Division of Agriculture . . . . .	Evelyn C. Hubbard.
Stenographer, President's office . . . . .	Lillian E. Lake.
Stenographer, President's office . . . . .	Ruth Leban.
Clerk, treasurer's office . . . . .	Mrs. Gertrude Milne.
Clerk, dean's office . . . . .	Mildred Pierpont.
Stenographer, library . . . . .	Frances Powers.
Stenographer, Short Courses . . . . .	R. Elvera Schuler.
Stenographer, Department of Agricultural Economics . . . . .	Ruth Sherburne.
Stenographer, Department of Dairying . . . . .	Clara Smith.
Stenographer, President's office . . . . .	Elsie M. Smith.
Stenographer, Extension Service . . . . .	Mrs. Ruth M. Smith.

<sup>1</sup> Temporary.

TABLE III. — *Speakers for the Year.**A. Speakers at Wednesday Assembly for Year ending Nov. 30, 1921.***1920.**

- Dec. 1. — Mr. John H. Reisner, Nanking, China.  
 Dec. 8. — Pres. Kenyon L. Butterfield.  
 Dec. 15. — Director Sidney B. Haskell, M. A. C.  
 Dec. 21. — Dean James A. Beebe, Boston University, Boston.

**1921.**

- Jan. 5. — Director John D. Willard, M. A. C.  
 Jan. 12. — Prof. James W. Crook, Amherst College.  
 Jan. 19. — Mr. M. V. Malcom, New York City.  
 Jan. 26. — Mr. Thomas A. Watson, Boston.  
 Feb. 2. — Student forum.  
 Feb. 9. — Dr. Charles E. Marshall, M. A. C.  
 Feb. 16. — Bishop Nikolai Velimirovich, Servia.  
 Feb. 23. — Dr. John M. Tyler, Amherst College.  
 Mar. 2. — Mr. Sumner R. Parker, M. A. C.  
 Mar. 9. — Prof. William J. Newlin, Amherst College.  
 Mar. 16. — Mr. Daniel Willard, Baltimore, Md.  
 Apr. 6. — Prof. Harold Whitehead, Boston University, Boston.  
 Apr. 13. — Dr. Edward O. Otis, Boston.  
 Apr. 20. — Dr. J. B. Lindsey, Mr. John A. Crawford, Mr. Starr M. King, M. A. C.  
 Apr. 27. — Col. Ira L. Reeves, New York City.  
 May 4. — Mr. Brayton C. Case, Burma.  
 May 11. — Student forum.  
 May 18. — Hon. John A. Kingsbury, New York City.  
 June 1. — Student forum.  
 Oct. 6.<sup>1</sup> — Student forum.  
 Oct. 13. — Prof. Fred C. Sears, M. A. C.  
 Oct. 20. — Dr. Edward Cummings, Boston.  
 Oct. 27. — Prof. Garrett Droppers, Williams College, Williamstown.  
 Nov. 3. — Rev. Frederick A. Lietch, Amherst.  
 Nov. 10. — Student mass meeting.  
 Nov. 17. — Mr. George W. Coleman, Boston.

*B. Speakers at Sunday Chapel for Year ending Nov. 30, 1921.***1920.**

- Jan. 2. — Rev. John Haynes Holmes, New York City.  
 Jan. 12. — Mr. Charles Stelzle, New York City.  
 Jan. 19. — Dr. Albert Bushnell Hart, Cambridge.

**1921.**

- Jan. 9. — Bishop Edwin H. Hughes, Malden.  
 Jan. 16. — Mr. Peter W. Collins, Boston.  
 Jan. 23. — Dr. Albert Parker Fitch, Amherst.  
 Jan. 30. — Rev. Herbert J. White, Hartford, Conn.  
 Feb. 6. — Dr. Charles Fleischer, Boston.  
 Feb. 13. — Mr. Alfred E. Stearns, Andover.  
 Feb. 20. — Rev. William Horace Day, Bridgeport, Conn.  
 Feb. 27. — Rev. Nehemiah Boynton, Brooklyn, N. Y.  
 Mar. 6. — Pres. John M. Thomas, Middlebury, Vt.  
 Mar. 13. — Dr. Rockwell H. Potter, Hartford, Conn.  
 Mar. 20. — Rev. W. W. Weeks, Richmond, Va.  
 Apr. 10. — Dr. D. Brewer Eddy, Boston.  
 Apr. 17. — Rev. J. Edgar Park, West Newton.  
 Apr. 24. — Dean Charles R. Brown, New Haven, Conn.  
 Oct. 2. — Dean Edward M. Lewis, M. A. C.  
 Nov. 6. — Rev. B. W. Lockhart, Manchester, N. H.  
 Nov. 13. — Rev. William Horace Day, Bridgeport, Conn.

<sup>1</sup> Assembly held on Thursdays, beginning with this date.

TABLE IV. — *Attendance.**A. In Work of College Grade.*

	REGISTRATION NOV. 30, 1920.			REGISTRATION NOV. 30, 1921.		
	Men.	Women.	Total.	Men.	Women.	Total.
Graduate students . . . . .	41	7	48	53	8	61
Senior class . . . . .	94	3	97	91	5	96
Junior class . . . . .	94	5	99	93	8	101
Sophomore class . . . . .	96	8	104	104	9	113
Freshman class . . . . .	124	11	135	147	15	162
Unclassified students . . . . .	9	1	10	—	—	—
Special students . . . . .	11	2	13	10	3	13
Totals . . . . .	469	37	506	498	48	546

*B. Short Course Enrollment.*

Two-Year Course, second year	125	10	135	129	9	138
Two-Year Course, first year .	130	12	142	150	5	155
Vocational Poultry Course .	19	—	19	26	—	26
Unit Course . . . . .	50	—	50	29	—	29
Totals . . . . .	314	22	336	334	14	348

*C. Other Short Course Enrollment.*

	REGISTRATION, 1919-20.			REGISTRATION, 1920-21.		
	Men.	Women.	Total.	Men.	Women.	Total.
School for Country Clergymen	90	—	—	18	1	19
Winter School . . . . .	90	22	112	69	14	83
Summer School . . . . .	107	150	257	67	192	259
Summer school for Federal men	65	—	65	65	—	65
Totals . . . . .	262	172	434	219	207	426



TABLE IV. — *Attendance* — Concluded.*D. Convention Registration.*

	1920.	1921.
State institutional superintendents and farmers . . . . .	—	50
Polish farmers' day . . . . .	—	100
Farmers' week and annual poultry convention . . . . .	1,701	3,000
Junior boys' and girls' prize winners' camp . . . . .	346	95
Girls' camp (paid) . . . . .	—	14
Boys' camp (paid) . . . . .	—	34
One-day campers (boys and girls) . . . . .	—	198
Extension workers' conference . . . . .	85	80
Sheep breeders' conference . . . . .	—	212
Clothing efficiency conferences (2) for paid leaders . . . . .	—	14
Clothing efficiency conference for local leaders . . . . .	—	53
Totals . . . . .	2,132	3,850

TABLE V. — *Legislative Budget, 1921.*

ITEMS.	Amount asked.	Amount granted.
Miscellaneous improvements and equipment . . . . .	\$75,000	\$25,000
Chemistry laboratory . . . . .	600,000	—
Improvements at power plant . . . . .	76,000	—
Addition to rural engineering building . . . . .	30,000	—
Purchase of Brooks' Farm . . . . .	21,400	—
Tennis courts and gymnasium for women students . . . . .	13,500	—
Administration building, Market-Garden Field Station . . . . .	10,000	10,000
Equipment for Tillson Farm . . . . .	10,000	—
Poultry breed and judging laboratory . . . . .	8,000	—
House for farm superintendent . . . . .	8,000	—
Macadam road . . . . .	8,000	—
	\$859,900	\$35,000

TABLE VI. — *Current Account, State Funds.*

	Requested 1921.	Appro- priated 1921.	Deficiency Appro- priation. <sup>1</sup>	Expended 1921.	Balance.
Personal services: —					
Administration . . . .	\$42,895	\$40,460	—	\$40,100 15	\$359 85
Instruction . . . .	207,165	188,915	\$80 00	171,177 00	17,818 00
General maintenance . .	132,377	118,000	120 69	119,033 63	—912 94
Experiment Station . . .	81,481	59,500 <sup>2</sup>	100 70	56,471 66	3,129 04
Extension Service . . .	62,360	47,300	—	46,884 54	415 46
Market-Garden Field Station	6,000	6,000	—	5,689 49	310 51
Short Courses . . . .	45,133	39,350	—	42,759 70	—3,409 70
Travel, office, and other ex- penses.	53,175	46,000	1,967 16	50,037 86	—2,070 70
Teaching, laboratory supplies and equipment.	74,960	58,000	890 70	58,869 69	21 01
Experiment Station:—					
Supplies, equipment and publications.	19,905	12,000 <sup>2</sup>	213 76	13,389 10	—1,175 34
Travel and office expenses .	5,375	3,300	37 70	3,980 24	—642 54
Extension Service, supplies, equipment, travel, etc.	67,200	36,000	727 03	37,139 56	—412 53
Short Courses . . . .	20,275	15,000	167 45	10,319 05	4,848 40
Heat, light, and power . .	74,000	60,000	1,192 22	72,266 49	—11,074 27
Farm . . . . .	27,295	26,000	841 94	24,938 97	1,902 97
Repairs, ordinary . . . .	35,000	25,000	148 39	26,095 14	—946 75
Replacements . . . . .	5,000	—	—	—	—
Market-Garden Field Station .	3,000	3,000	72 13	3,031 49	40 64
Fertilizer law control . . .	14,500	12,500	95 03	12,515 18	79 85
Poultry disease law . . . .	6,000	5,000	—	4,724 65	275 35
Milk-testing inspection law .	600	550	19 96	564 63	5 33
Trustees' expenses . . . .	1,200	1,200	57 29	1,220 75	36 54
Printing reports . . . . .	5,500	5,000	203 87	1,836 97	3,366 90
Commercial feedstuffs . . .	8,000	7,000	23 35	6,954 09	69 26
Totals . . . . .	\$998,396	\$815,075	\$6,959 37	\$810,000 03	\$12,034 34

<sup>1</sup> Deficiency appropriation to meet expenses incurred in 1919-20.<sup>2</sup> \$2,000 transferred from original appropriation for experiment station supplies to personal service.

TABLE VII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1921.*A. *Home Addresses of Students (classified by Towns and Cities).*

Abington . . . . . 1	Gill . . . . . 1	NORTHAMPTON . . . . . 3
ALLENTOWN, PA. . . . . 1	Glastonbury, Conn. . . . . 1	Northfield . . . . . 1
Altamont, N. Y. . . . . 1	Greenwich . . . . . 1	Palmer . . . . . 1
Amherst . . . . . 11	Groveland . . . . . 1	PANAMA CITY, R. P. . . . . 1
Arlington . . . . . 3	Hadley . . . . . 1	Peekskill, N. Y. . . . . 1
Ashland . . . . . 1	Hatfield . . . . . 2	PHILADELPHIA, PA. . . . . 1
Auburn . . . . . 1	HOLYOKE . . . . . 7	PITTSFIELD . . . . . 1
Barnstable . . . . . 1	Hudson . . . . . 2	PROVIDENCE, R. I. . . . . 1
Barre . . . . . 1	JACKSONVILLE, FLA. . . . . 1	Provincetown . . . . . 1
Belchertown . . . . . 1	Kars, Armenia . . . . . 1	Reading . . . . . 2
Bernardston . . . . . 2	Kingston, Md. . . . . 1	Richmond . . . . . 1
BEVERLY . . . . . 1	Kingston . . . . . 1	Rockland . . . . . 2
BOSTON . . . . . 13	LAWRENCE . . . . . 2	Saugus . . . . . 2
Bridgewater . . . . . 2	Lee . . . . . 2	Shelburne . . . . . 2
BROCKTON . . . . . 4	Lexington . . . . . 1	South Hadley . . . . . 1
CAMBRIDGE . . . . . 1	Littleton . . . . . 1	Spencer . . . . . 1
Chatham . . . . . 1	LOWELL . . . . . 1	SPRINGFIELD . . . . . 8
Chelmsford . . . . . 1	MALDEN . . . . . 1	Springfield, Vt. . . . . 1
CHELSEA . . . . . 1	Mansfield . . . . . 1	Sterling . . . . . 1
Chester . . . . . 1	Marblehead . . . . . 1	Stow . . . . . 1
Columbia City, Ind. . . . . 1	Medfield . . . . . 2	TAUNTON . . . . . 1
Cumberland Center, Me. . . . . 1	MELROSE . . . . . 5	Wareham . . . . . 1
Dalton . . . . . 3	Methuen . . . . . 1	Warren . . . . . 1
East Bridgewater . . . . . 3	Millis . . . . . 1	Weehawken, N. J. . . . . 1
Easthampton . . . . . 1	Millville . . . . . 2	West Bridgewater . . . . . 1
Englewood, N. J. . . . . 1	Monson . . . . . 1	Weston . . . . . 1
EVERETT . . . . . 1	Montague . . . . . 2	Weymouth . . . . . 1
FALL RIVER . . . . . 1	NEW BEDFORD . . . . . 1	Winchester . . . . . 1
Falmouth . . . . . 1	NEWBURYPORT . . . . . 1	WORCESTER . . . . . 3
FITCHBURG . . . . . 1	NEWTON . . . . . 1	Worthington . . . . . 1
Framingham . . . . . 2	NEW YORK, N. Y. . . . . 3	
Gardner . . . . . 1	NORTH ADAMS . . . . . 1	

B. *Home Addresses (classified by States).*

	Number.	Per Cent.		Number.	Per Cent.
Armenia . . . . .	1	.61	New Jersey . . . . .	2	1.22
Connecticut . . . . .	1	.61	New York . . . . .	5	3.07
Florida . . . . .	1	.61	Pennsylvania . . . . .	2	1.22
Indiana . . . . .	1	.61	Republic of Panama . . . . .	1	.61
Maine . . . . .	1	.61	Rhode Island . . . . .	1	.61
Maryland . . . . .	1	.61	Vermont . . . . .	1	.61
Massachusetts . . . . .	144	89.00		162	100.00

TABLE VII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1921 — Continued.**C. Home Addresses (classified by Counties of Massachusetts).*

	Number.	Per Cent.		Number.	Per Cent.
Barnstable . . .	4	2.78	Middlesex . . .	26	18.06
Berkshire . . .	8	5.56	Norfolk . . .	4	2.78
Bristol . . .	4	2.78	Plymouth . . .	15	10.41
Essex . . .	9	6.26	Suffolk . . .	14	9.72
Franklin . . .	8	5.55	Worcester . . .	12	8.34
Hampden . . .	18	12.49		144	100.00
Hampshire . . .	22	15.27			

*D. Nativity of Parents.*

	Number.	Per Cent.
Neither parent foreign born . . . . .	104	64.20
Both parents foreign born . . . . .	32	19.75
Father (only) foreign born . . . . .	14	8.64
Mother (only) foreign born . . . . .	10	6.17
No statistics . . . . .	2	1.22
	162	99.98

*E. Education of Father.*

	Number.	Per Cent.
Common school . . . . .	67	41.36
High school . . . . .	43	26.54
Business school . . . . .	19	11.74
College or university . . . . .	28	17.29
No statistics . . . . .	5	3.07
	162	100.00



TABLE VII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1921* — Continued.*F. Religious Census.*

	MEMBERSHIP.		PREFERENCE.		TOTALS.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Baptist . . . . .	11	6.79	3	1.86	14	8.64
Catholic . . . . .	22	13.58	—	—	22	13.58
Congregationalist . . . . .	36	22.22	14	8.64	50	30.86
Episcopal . . . . .	11	6.79	—	—	11	6.79
Methodist . . . . .	15	9.26	3	1.86	18	11.11
Presbyterian . . . . .	3	1.86	—	—	3	1.86
Unitarian . . . . .	10	6.17	2	1.22	12	7.41
Universalist . . . . .	3	1.86	1	.61	4	2.47
Miscellaneous . . . . .	25	15.43	2	1.22	27	16.67
No statistics . . . . .	1	.61	—	—	1	.61
	137	84.57	25	15.41	162	100.00

*G. Occupation of Father.*

	Number.	Per Cent.
Agriculture and horticulture . . . . .	33	20.37
Artisans . . . . .	41	25.31
Business . . . . .	44	27.16
Deceased or no statistics . . . . .	16	9.88
Miscellaneous . . . . .	13	8.02
Professional . . . . .	15	9.26
	162	100.00

*H. Intended Vocation of Student.*

	Number.	Per Cent.
Agriculture or horticulture (practical) . . . . .	67	41.36
Agriculture or horticulture (professional) . . . . .	48	29.63
Professions . . . . .	7	4.32
Miscellaneous . . . . .	11	6.79
Undecided or no statistics . . . . .	29	17.90
	162	100.00

TABLE VII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1921 — Concluded.**I. Farm Experience.*

	Number.	Per Cent.
Brought up on a farm . . . . .	48	29.63
Not brought up on a farm and having no or practically no farm experience.	37	22.84
Not brought up on a farm, but having had some farm experience.	77	47.53
	162	100.00

*J. Miscellaneous Statistics.*

Average age . . . . . 19.48 years

TABLE VIII. — *Cases treated at the Infirmary Dec. 1, 1920, to Nov. 30, 1921.*

	Daily Count.	Individual.
<b>1920</b>		
December 1 to 31:		
House cases . . . . .	77	6
Out-patients . . . . .	52	23
<b>1921</b>		
January 1 to 31:		
House cases . . . . .	61	10
Out-patients . . . . .	99	34
February 1 to 28:		
House cases . . . . .	69	14
Out-patients . . . . .	80	36
March 1 to 31:		
House cases . . . . .	120	66
Out-patients . . . . .	15	34
April 1 to 30:		
House cases . . . . .	101	16
Out-patients . . . . .	22	19
May 1 to 31:		
House cases . . . . .	90	8
Out-patients . . . . .	85	24
June 1 to 30:		
House cases . . . . .	19	3
Out-patients . . . . .	19	11
July 1 to 31:		
House cases . . . . .	6	2
Out-patients . . . . .	13	13
September 23 to 30:		
House cases . . . . .	9	3
Out-patients . . . . .	4	4
October 1 to 31:		
House cases . . . . .	76	16
Out-patients . . . . .	74	35
November 1 to 30:		
House cases . . . . .	44	6
Out-patients . . . . .	135	55

Number of house cases . . . . .	672
Number of out-patients . . . . .	598
Total . . . . .	1,270
Number cared for in the house . . . . .	150
Number cared for as out-patients . . . . .	288
Total . . . . .	438

# REPORT OF THE TREASURER

FOR THE FISCAL YEAR ENDING NOV. 30, 1921.

## BALANCE SHEET.

	DR.	CR.
<b>1920</b>		
Dec. 1. To balance on hand . . . . .	\$37,319 99	
<b>1921</b>		
Nov. 30. To departmental income . . . . .	127,644 16	
Nov. 30. To receipts from State Treasurer . . . . .	822,439 69	
Nov. 30. To September, October, and November, 1920, schedule . . . . .	116,185 56	
Nov. 30. To refunds to State Treasurer . . . . .	105 68	
Nov. 30. To receipts from United States Treasurer . . . . .	126,219 69	
Nov. 30. To November schedule in transit . . . . .	79,862 45	
Nov. 30. Expenditures of September, October, and November, 1920, paid in this fiscal year . . . . .		\$116,185 56
Nov. 30. Refunds transferred to State Treasurer . . . . .		105 68
Nov. 30. Expenditures for fiscal year . . . . .		1,038,231 03
Nov. 30. Income transferred to State Treasurer . . . . .		127,644 16
Nov. 30. Balance on hand . . . . .		30,227 89
Nov. 30. Journal transfer . . . . .	2,617 10	
	\$1,312,394 32	\$1,312,394 32

## STATEMENT OF LEGISLATIVE APPORTIONMENT AND EXPENDITURES FOR FISCAL YEAR ENDING NOV. 30, 1921, AND APPORTIONMENT REQUESTED FOR 1922.

	Apportionment for Last Fiscal Year.	Expenditures.	Requested Apportionment for New Fiscal Year.
College:			
Personal services . . . . .	\$347,575 69	\$330,310 78	\$366,535 00
Maintenance . . . . .	220,040 41	232,208 15	219,000 00
	\$567,616 10	\$562,518 93	\$585,535 00
Experiment Station:			
Personal services . . . . .	\$59,600 70	\$56,471 66	\$66,075 00
Maintenance . . . . .	15,551 46	17,369 34	24,835 00
	75,152 16	73,841 00	90,910 00

STATEMENT OF LEGISLATIVE APPORTIONMENT AND EXPENDITURES FOR  
FISCAL YEAR ENDING NOV. 30, 1921, AND APPORTIONMENT RE-  
QUESTED FOR 1922 — *Concluded.*

	Apportionment for Last Fiscal Year.	Expenditures.	Requested Apportionment for New Fiscal Year.
Extension Service:			
Personal services . . .	\$47,300 00	\$46,884 54	\$59,780 00
Maintenance . . .	36,727 03	37,139 56	44,000 00
	\$84,027 03	\$84,024 10	\$103,780 00
Short Courses:			
Personal services . . .	\$39,350 00	\$42,759 70	\$53,640 00
Maintenance . . .	15,167 45	10,319 05	19,235 00
	54,517 45	53,078 75	72,875 00
Market-Garden Field Station:—			
Personal services . . .	\$6,000 00	\$5,689 49	\$6,500 00
Maintenance . . .	3,072 13	3,031 49	3,825 00
	9,072 13	8,720 98	10,325 00
Trustees, travel . . .	\$1,257 29	\$1,220 75	\$1,200 00
Printing reports . . .	5,203 87	1,836 97	5,000 00
Commercial feedstuffs . .	7,023 35	6,954 09	8,000 00
Totals . . .	13,484 51	10,011 81	14,200 00
Fertilizer law . . .	\$12,595 03	\$12,515 18	\$14,500 00
Poultry law . . .	5,000 00	4,724 65	6,500 00
Milk-testing law . . .	569 96	564 63	700 00
Totals . . .	18,164 99	17,804 46	21,700 00
Miscellaneous improve- ments and equipment	- -	- -	- 75,000 00
Totals . . .	- \$822,034 37	- \$810,000 03	- \$974,325 00
Balance unexpended . .	- -	- 12,034 34	- -
	- -	- \$822,034 37	- -

## CASH STATEMENT.

	Other Funds.	State Funds.	Totals.
Balance Dec. 1, 1920 . . . . .	\$37,319 99	-	\$37,319 99
<i>Receipts.</i>			
College receipts from students and others . . . . .	-	-	17,325 67
Tuition . . . . .	-	\$3,322 02	
Laboratory fees . . . . .	-	6,091 68	
Rents . . . . .	-	7,911 97	
Department sales . . . . .	-	-	75,201 65
Produce . . . . .	-	64,533 83	
Miscellaneous . . . . .	-	10,667 82	
Experiment Station . . . . .	-	-	9,465 84
Cranberry receipts . . . . .	-	6,318 34	
Chemical receipts . . . . .	-	1,490 48	
Miscellaneous . . . . .	-	1,657 02	
Extension Service . . . . .	-	-	1,131 44
Correspondence Courses . . . . .	-	716 85	
Miscellaneous . . . . .	-	414 59	
Short Courses . . . . .	-	-	4,921 85
Students' fees . . . . .	-	4,491 85	
Summer School . . . . .	-	-	
Winter School . . . . .	-	430 00	



CASH STATEMENT — *Concluded.*

	Other Funds.	State Funds.	Totals.
<i>Receipts — Concluded.</i>			
Market-Garden Field Station			\$3,071 14
Produce	-	\$3,071 14	
Fertilizer law	-	14,465 39	14,465 39
Milk-testing law	-	678 84	678 84
Poultry law	-	1,382 34	1,382 34
Treasurer of the Commonwealth			822,439 69
Maintenance	-	739,328 89	
Special appropriation	-	79,771 44	
Endowment	\$3,339 36	-	
Federal government			126,219 69
Land grant of 1862	7,300 00	-	
Hatch fund of 1887	15,000 00	-	
Morrill fund of 1890	16,666 67	-	
Adams fund of 1906	15,000 00	-	
Nelson fund of 1907	16,666 66	-	
Smith-Lever fund of 1914	31,262 06	-	
Short Course, two years	24,324 30	-	
November schedules in transit	-	79,862 45	79,862 45
Journal transfer	-	2,617 10	2,617 10
	\$166,879 04	\$1,029,224 04	\$1,196,103 08
<i>Payments.</i>			
College expenses			\$610,230 32
Personal services	\$44,819 97	\$330,310 78	
Maintenance	2,891 42	232,208 15	
Experiment Station			103,591 02
Personal services	29,434 08	56,471 66	
Maintenance	315 94	17,369 34	
Extension service			118,127 71
Personal services	32,988 50	46,884 54	
Maintenance	1,115 11	37,139 56	
Short Courses			78,164 88
Personal services	21,467 67	42,759 70	
Maintenance	3,618 46	10,319 05	
Market-Garden Field Station			8,720 98
Personal services	-	5,689 49	
Maintenance	-	3,031 49	
Trustees, travel	-	1,220 75	1,220 75
Printing reports	-	1,836 97	1,836 97
Commercial feedstuffs	-	6,954 09	6,954 09
Fertilizer law	-	12,515 18	12,515 18
Poultry law	-	4,724 65	4,724 65
Milk-testing law	-	564 63	564 63
Special appropriations			91,579 85
1919, women's dormitory	-	21,164 19	
1919, engineering study	-	62 82	
1920, stable for cavalry unit	-	13,716 61	
1921, improvements and equipment	-	47,305 22	
1921, Market-Garden Field Station, administration building	-	7,331 01	
1921, architect's fees, chemistry building	-	2,000 00	
Income		127,644 16	127,644 16
Balance	30,227 89	-	30,227 89
	\$166,879 04	\$1,029,224 04	\$1,196,103 08

## CLASSIFICATION OF INCOME FROM STUDENTS AND OTHERS.

	Laboratory Fees.	Department Sales.	Rent.	Miscellaneous.	Tuition.	Totals.
Agricultural economics	-	-	-	\$1 55	-	\$1 55
Agronomy . . . . .	\$324 50	-	-	31 47	-	355 97
Animal husbandry . . . . .	215 50	-	-	-	-	215 50
Beekeeping . . . . .	-	\$20 50	-	-	-	20 50
Botany . . . . .	562 50	-	-	-	-	562 50
Chemistry . . . . .	2,665 79	-	-	18 70	-	2,684 49
Dairying . . . . .	240 50	27,297 31	-	-	-	27,537 81
Domestic science . . . . .	36 50	-	-	13 68	-	50 18
Entomology . . . . .	96 00	-	-	2 46	-	98 46
Farm . . . . .	-	15,400 37	-	333 59	-	15,733 96
Farm management . . . . .	88 00	-	-	-	-	88 00
Floriculture . . . . .	181 00	4,499 41	-	-	-	4,680 41
Forestry . . . . .	72 00	-	-	-	-	72 00
General horticulture . . . . .	-	-	-	477 50	-	477 50
Grounds . . . . .	-	-	-	2 75	-	2 75
Horticultural manufactures.	-	697 45	-	-	-	697 45
Hospital . . . . .	-	-	-	1,190 90	-	1,190 90
Landscape gardening . . . . .	389 00	-	-	-	-	389 00
Language and literature.	146 00	-	-	-	-	146 00
Library . . . . .	-	-	-	111 62	-	111 62
Mathematics . . . . .	47 00	-	-	4 20	-	51 20
Microbiology . . . . .	452 18	-	-	324 74	-	776 92
Mount Toby . . . . .	-	1,621 78	-	-	-	1,621 78
Physics . . . . .	72 00	-	-	2 25	-	74 25
Pomology . . . . .	95 00	2,540 57	-	-	-	2,635 57
Poultry husbandry . . . . .	49 50	9,557 58	-	-	-	9,607 08
Rural engineering . . . . .	186 00	-	-	29 95	-	215 95
Rural sociology . . . . .	-	-	-	1 80	-	1 80
Vegetable gardening . . . . .	130 50	2,898 86	-	-	-	3,029 36
Veterinary . . . . .	68 00	-	-	-	-	68 00
Zoölogy and geology . . . . .	482 00	-	-	-	-	482 00
Operating and maintenance.	-	-	•\$85 00	3,954 23	\$3,322 02	7,361 25
General expense (cash credits).	-	-	-	1,937 28	-	1,937 28
Adams Hall . . . . .	-	-	4,837 98	13 67	-	4,851 65
Draper Hall . . . . .	-	-	912 00	-	-	912 00
North dormitory . . . . .	-	-	1,859 13	-	-	1,859 13

CLASSIFICATION OF INCOME FROM STUDENTS AND OTHERS — *Concluded.*

	Labora- tory Fees.	Depart- ment Sales.	Rent.	Miscel- laneous.	Tuition.	Totals.
South dormitory . .	-	-	\$1,214 86	-	-	\$1,214 86
College residences . .	-	-	616 54	-	-	616 54
Dean's office . .	-	-	-	\$0 10	-	10
President's office . .	-	-	-	24 11	-	24 11
Registrar's office . .	-	-	-	50	-	50
Treasurer's office . .	-	-	-	69 44	-	69 44
Totals . .	\$6,599 47	\$64,533 83	\$9,525 51	\$8,546 49	\$3,322 02	\$92,527 32

## ANALYSIS OF COLLEGE EXPENDITURES.

ADMINISTRATION.	Office Expense.	Salaries and Labor.	Travel.	Minor Equipment.	Building Supplies.	Publicity and Lectures.	Student Activity.	Commencement.	Miscellaneous.	Totals.
Dean's office . . . . .	\$395 96	\$309 24	-	\$12 18	-	-	-	-	-	\$717 38
Executive order . . . . .	-	-	\$2,367 83	-	-	\$2,876 58	\$121 00	\$1,526 99	\$6,846 43	13,738 83
President's office . . . . .	2,140 54	198 75	156 78	3 87	\$0 60	-	-	-	151 57	2,650 11
Registrar's office . . . . .	636 87	102 28	61 22	1 36	-	-	-	-	-	801 73
Treasurer's office . . . . .	1,086 11	322 22	294 82	115 51	26 26	-	-	-	120 04	1,964 96
Administration (salaries) . . . . .	-	40,100 15	-	-	-	-	-	-	-	40,100 15
Totals . . . . .	\$4,259 48	\$41,030 64	\$2,880 65	\$132 92	\$26 86	\$2,876 58	\$121 00	\$1,526 99	\$7,118 04	\$59,973 16

MAINTENANCE.	Office Expense.	Labor.	Laboratory Supplies.	Minor Equipment.	Building Supplies.	Travel.	General Expense.	Miscellaneous.	Salaries.	Totals.
Academic maintenance:										
Agricultural economics . . . . .	\$90 23	\$144 75	\$60 71	\$43 31	-	\$61 31	-	\$43 86	-	\$444 17
Agricultural education . . . . .	281 27	24 50	3 68	9 88	-	44 75	-	15 96	-	380 04
Agromony . . . . .	169 42	326 19	267 58	404 69	-	62 84	-	-	-	1,230 72
Animal husbandry . . . . .	148 13	57 06	97 30	5 38	-	363 41	-	-	-	671 28



Beekkeeping . . . . .	-	310 03	100 87	87 36	\$18 63	-	-	516 89
Botany . . . . .	240 84	962 11	486 20	85 12	99 21	7 50	-	1,883 28
Chemistry . . . . .	159 74	1,100 79	3,807 32	22 37	199 13	28 29	3 00	5,318 54
Dairying . . . . .	220 08	7,376 39	27,767 55	385 41	410 47	196 69	-	36,356 59
Domestic science . . . . .	343 18	228 34	400 86	150 57	-	454 86	4 17	1,581 98
Economics and sociology . . . . .	73 31	289 40	29 28	-	-	-	-	391 99
Entomology . . . . .	96 41	409 79	78 26	6 15	123 86	-	-	714 47
Farm management . . . . .	175 28	24 73	133 24	82 44	-	116 89	-	532 58
Floriculture . . . . .	88 71	6,251 79	1,557 84	119 32	71 73	54 40	-	8,143 79
Forestry . . . . .	9 04	133 17	128 10	1 04	5 18	-	-	276 53
General agriculture . . . . .	-	2,143 06	-	120 02	330 98	-	129 69	2,723 75
Horticulture manufactures . . . . .	112 89	1,485 04	1,530 61	177 76	-	17 95	-	3,324 25
Hospital . . . . .	-	2,382 72	-	89 93	-	-	-	4,414 63
Landscape gardening . . . . .	19 41	2 53	286 90	143 14	-	20 17	2 32	474 47
Language and literature . . . . .	69 48	14 26	102 33	21 27	-	13 00	-	220 34
Mathematics . . . . .	74 23	106 75	35 00	-	24 80	-	-	240 78
Microbiology . . . . .	87 46	701 05	502 53	511 65	88 30	13 24	-	1,904 23
Military science . . . . .	116 65	299 07	-	333 39	369 43	15 39	51 24	1,401 50
Mount Toby . . . . .	-	3,169 34	-	22 71	-	-	67 77	3,259 82
Physical education . . . . .	142 02	293 58	366 90	-	54 61	257 33	-	1,114 44
Physics . . . . .	30 42	241 59	306 76	47 47	26 62	-	29 98	682 84
Pomology . . . . .	100 94	3,751 96	803 64	141 30	-	113 11	-	4,910 95

ANALYSIS OF COLLEGE EXPENDITURES — *Concluded.*

MAINTENANCE.	Office Expense.	Labor.	Laboratory Supplies.	Minor Equip- ment.	Building Supplies.	Travel.	General Expense.	Miscel- laneous.	Salaries.	Totals.
Poultry husbandry . . . . .	\$834 17	\$4,978 76	\$10,348 17	\$195 33	\$58 21	\$133 28	-	-	-	\$16,545 92
Rural engineering . . . . .	72 75	141 90	321 33	222 13	148 23	26 51	-	-	-	932 85
Rural sociology . . . . .	56 85	12 90	-	-	-	12 00	-	-	-	81 75
Rural social science . . . . .	31 35	-	-	-	-	-	-	-	-	31 35
Vegetable gardening . . . . .	168 93	4,612 93	1,060 27	132 17	214 81	259 88	-	\$38 11	-	6,487 10
Veterinary . . . . .	77 09	361 10	838 03	93 15	25 98	10 17	-	-	-	1,405 52
Women's dormitory . . . . .	26 13	2,463 95	-	393 71	135 56	-	-	118 46	-	3,137 81
Zoölogy and geology . . . . .	21 11	323 19	192 57	71 39	5 23	42 08	-	-	-	655 57
General maintenance:										
Farm . . . . .	-	17,251 97	-	-	-	-	\$24,938 97	-	-	42,190 94
General horticulture . . . . .	305 94	4,627 95	-	1,211 90	-	42 62	1,413 93	920 32	-	8,522 66
Graduate School . . . . .	49 50	42 36	-	-	-	-	-	-	-	91 86
Grounds . . . . .	-	7,424 46	-	187 79	-	-	554 21	139 75	-	8,306 21
Library . . . . .	598 25	1,474 26	-	170 06	78 41	200 44	6,421 14	-	-	8,942 56
General expense . . . . .	-	-	-	-	-	-	1,937 28	-	-	1,937 28
Operating and maintenance . . . . .	-	40,796 74	-	-	-	-	111,699 71	-	-	152,496 45
Totals . . . . .	\$5,091 21	\$116,740 46	\$51,613 73	\$5,689 31	\$2,489 38	\$2,566 11	\$149,123 55	\$1,566 93	-	\$334,880 68

Instruction (salaries)	.	.	.	.	-	-	-	-	-	\$171,177 00	\$171,177 00
Morrill fund	.	.	.	.	-	-	-	-	-	17,033 35	17,033 35
Nelson fund	.	.	.	.	-	-	-	-	-	17,033 33	17,033 33
Endowment fund	.	.	.	.	-	-	-	-	2,891 42	10,753 29	13,644 71
Income to State Treasurer	.	.	.	.	-	-	-	-	-	-	92,527 32
Administration	.	.	.	.	-	-	-	-	-	-	\$646,296 39
					-	-	-	-	-	-	59,973 16
Less refunds	.	.	.	.	-	-	-	-	-	-	\$706,269 55
Grand total	.	.	.	.	-	-	-	-	-	-	89 00
					-	-	-	-	-	-	\$706,180 55

## CURRENT ACCOUNTS, 1921.

*Disbursements and Receipts.*

ACCOUNTS.	Disbursements from Nov. 30, 1920, to Nov. 30, 1921.	Receipts from Nov. 30, 1920, to Nov. 30, 1921.	Apportionment for Year ending Nov. 30, 1921.	Balance for Credit.
Administration:				
Dean's office . . . . .	\$717 38	\$0 10	\$600 00	—\$117 38
Executive order . . . . .	13,738 83	—	15,000 00	1,261 17
President's office . . . . .	2,650 11	24 11	2,200 00	—450 11
Registrar's office . . . . .	801 73	50	800 00	—1 73
Salaries . . . . .	40,100 15	—	40,460 00	359 85
Treasurer's office . . . . .	1,964 96	69 44	1,650 00	—314 96
Maintenance, academic:				
Agricultural economics . . . . .	444 17	1 55	550 00	105 83
Agricultural education . . . . .	380 04	—	400 00	19 96
Agronomy . . . . .	1,230 72	355 97	1,200 00	—30 72
Animal husbandry . . . . .	671 28	215 50	700 00	28 72
Beekeeping . . . . .	516 89	20 50	500 00	—16 89
Botany . . . . .	1,883 28	562 50	1,750 00	—133 28
Chemistry . . . . .	5,318 54	2,684 49	5,200 00	—118 54
Dairying . . . . .	36,356 59	27,537 81	36,500 00	143 41
Domestic science . . . . .	1,581 98	50 18	1,600 00	18 02
Economics and sociology . . . . .	391 99	—	400 00	8 01
Entomology . . . . .	714 47	98 46	800 00	85 53
Farm management . . . . .	532 58	88 00	500 00	—32 58
Floriculture . . . . .	8,143 79	4,680 41	8,000 00	—143 79
Forestry . . . . .	276 53	72 00	250 00	—26 53
General agriculture . . . . .	2,723 75	—	2,570 00	—153 75
Horticultural manufactures . . . . .	3,324 25	697 45	3,500 00	175 75
Hospital . . . . .	4,414 63	1,190 90	3,225 00	—1,189 63
Landscape gardening . . . . .	474 47	389 00	500 00	25 53
Language and literature . . . . .	220 34	146 00	400 00	179 66
Mathematics . . . . .	240 78	51 20	250 00	9 22
Microbiology . . . . .	1,904 23	776 92	1,800 00	—104 23
Military science . . . . .	1,401 50	—	1,600 00	198 50
Mount Toby . . . . .	3,259 82	1,621 78	3,500 00	240 18
Physical education . . . . .	1,114 44	—	1,200 00	85 56
Physics . . . . .	682 84	74 25	700 00	17 16
Pomology . . . . .	4,910 95	2,635 57	5,325 00	414 05
Poultry husbandry . . . . .	16,545 92	9,607 08	16,000 00	—545 92
Rural engineering . . . . .	932 85	215 95	850 00	—82 85
Rural sociology . . . . .	81 75	1 80	300 00	218 25
Rural social science . . . . .	31 35	—	200 00	168 65
Vegetable gardening . . . . .	6,487 10	3,029 36	7,500 00	1,012 90
Veterinary . . . . .	1,405 52	68 00	1,300 00	—105 52
Women's dormitory . . . . .	3,137 81	4,851 65	2,700 00	—437 81
Zoölogy and geology . . . . .	655 57	482 00	650 00	—5 57
Maintenance, general:				
Farm . . . . .	42,190 94	15,733 96	41,500 00	—690 94
General horticulture . . . . .	8,522 66	477 50	10,000 00	1,477 34
Graduate school . . . . .	91 86	—	100 00	8 14
Grounds . . . . .	8,306 21	2 75	8,500 00	193 79
Library . . . . .	8,942 56	111 62	7,500 00	—1,442 56
General expense . . . . .	1,937 28	1,937 28	—	—
Operating and maintenance . . . . .	152,496 45	11,963 78	136,000 00	—16,496 45
Endowment fund . . . . .	13,644 71	10,639 36	10,613 32	3,650 00
Instruction:				
Salaries . . . . .	171,177 00	—	188,915 00	17,738 00
United States Treasurer, Morrill fund . . . . .	17,033 35	16,666 67	16,666 67	9,722 22
United States Treasurer, Nelson fund . . . . .	17,033 33	16,666 66	16,666 66	9,722 21
State Treasurer, account of schedules . . . . .	—	562,518 93	—	—
Income to State Treasurer . . . . .	92,527 32	—	—	—
Plus journal entries . . . . .	\$706,269 55	\$699,018 94	\$609,591 65	\$24,645 87
Less refunds . . . . .	89 00	3,422 91	—	—
Balance beginning fiscal year Dec. 1, 1920 . . . . .	\$706,180 55	\$702,441 85	—	—
Balance on hand Nov. 30, 1921 . . . . .	23,094 43	26,833 13	—	—
	\$729,274 98	\$729,274 98	—	—



## COLLEGE ACCOUNTS.

*Comparative Disbursements and Receipts for 1920-21.*

ACCOUNTS.	DISBURSEMENTS.		RECEIPTS.	
	1920.	1921.	1920.	1921.
Agricultural economics . . . . .	\$508 63	\$444 17	-	\$1 55
Agricultural education . . . . .	461 66	380 04	-	-
Agronomy . . . . .	1,152 74	1,230 72	\$212 95	355 97
Animal husbandry . . . . .	701 03	671 28	342 00	215 50
Beekeeping . . . . .	482 57	516 89	145 85	20 50
Botany . . . . .	1,617 02	1,883 28	497 00	562 50
Chemistry . . . . .	5,030 82	5,318 54	2,499 69	2,684 49
Dairying . . . . .	39,164 74	36,356 59	29,805 99	27,537 81
Dean's office . . . . .	603 45	717 38	-	10
Domestic science . . . . .	1,822 95	1,581 98	-	50 18
Economics and sociology . . . . .	71 43	391 99	-	-
Entomology . . . . .	605 14	714 47	131 00	98 46
Executive order . . . . .	10,841 62	13,738 83	-	-
Farm . . . . .	61,369 34	42,190 94	41,599 81	15,733 96
Farm management . . . . .	588 76	532 58	172 50	88 00
Floriculture . . . . .	7,024 55	8,143 79	5,530 80	4,680 41
Forestry . . . . .	165 08	276 53	12 00	72 00
General agriculture . . . . .	2,398 08	2,723 75	-	-
General horticulture . . . . .	8,742 43	8,522 66	342 26	477 50
Graduate school . . . . .	51 40	91 86	-	-
Grounds . . . . .	7,486 07	8,306 21	22 30	2 75
Horticultural manufactures . . . . .	3,311 36	3,324 25	601 15	697 45
Hospital . . . . .	3,121 28	4,414 63	758 92	1,190 90
Landscape gardening . . . . .	479 42	474 47	386 00	389 00
Language and literature . . . . .	355 66	220 34	202 00	146 00
Library . . . . .	7,700 67	8,942 56	34 94	111 62
Mathematics . . . . .	200 36	240 78	84 00	51 20
Microbiology . . . . .	1,448 27	1,904 23	540 38	776 92
Military . . . . .	1,296 83	1,401 50	12 28	-
Mount Toby . . . . .	393 48	3,259 82	585 11	1,621 78
Physical education . . . . .	1,125 72	1,114 44	-	-
Physics . . . . .	661 61	682 84	93 85	74 25
Pomology . . . . .	5,941 88	4,910 95	4,003 45	2,635 57
Poultry husbandry . . . . .	13,638 17	16,545 92	9,355 08	9,607 07
President's office . . . . .	2,324 00	2,650 11	25 29	24 11
Registrar's office . . . . .	797 83	801 73	15	50
Rural engineering . . . . .	639 11	932 85	262 50	215 95
Rural sociology . . . . .	88 35	81 75	-	1 80
Rural social science . . . . .	-	31 35	-	-
Salaries . . . . .	187,402 56	211,277 15	-	-
Treasurer's office . . . . .	1,943 66	1,964 96	76 08	69 44
Vegetable gardening . . . . .	6,018 22	6,487 10	3,096 25	3,029 36
Veterinary science . . . . .	1,456 27	1,405 52	25 28	68 00
Women's dormitory . . . . .	-	3,137 81	-	4,851 65
Zoölogy and geology . . . . .	592 79	655 57	385 00	482 00
General expense . . . . .	1,453 61	1,937 28	1,453 61	1,937 28
Operating and maintenance . . . . .	130,948 01	152,496 45	12,761 54	11,963 78
State Treasurer:				
Endowment fund . . . . .	7,350 53	13,644 71	10,613 32	10,639 36
United States Treasurer:				
Morrill fund . . . . .	16,371 24	17,033 35	16,666 67	16,666 67
Nelson fund . . . . .	16,371 26	17,033 33	16,666 66	16,666 66
State Treasurer, account of schedules	-	-	527,147 56	562,518 93
Income to State Treasurer . . . . .	116,546 75	92,527 32	-	-
	\$680,863 41	\$706,269 55	\$687,652 22	\$699,018 94
Less journal entries and refunds . . . . .	-11 26	-89 00	-11 26	+13,422 91
	\$680,852 15	\$706,180 55	\$687,640 96	\$702,441 85
Less amount transferred from Experiment Station . . . . .	-	-	2,935 19	-
	\$680,852 15	\$706,180 55	\$684,705 77	\$702,441 85
Balance beginning fiscal year . . . . .	-	-	22,979 51	26,833 13
Balance on hand at close of fiscal year . . . . .	26,833 13	23,094 43	-	-
	\$707,685 28	\$729,274 98	\$707,685 28	\$729,274 98

COLLEGE ACCOUNTS — *Concluded.**Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1920 . . . . .	—	\$26,833 13
Institution receipts Nov. 30, 1921 . . . . .	—	92,527 32
State Treasurer's receipts Nov. 30, 1921 . . . . .	—	562,518 93
United States Treasurer's receipts Nov. 30, 1921 . . . . .	—	33,333 33
State Treasurer, endowment fund . . . . .	—	10,639 36
Total disbursements . . . . .	\$610,230 32	—
Receipts turned in to State Treasurer . . . . .	92,527 32	—
	\$702,757 64	\$725,852 07
Bills receivable Dec. 1, 1920, deducted . . . . .	—	8,773 84
Bills payable Dec. 1, 1920, deducted . . . . .	1,785 17	—
	\$700,872 47	\$717,078 23
Bills receivable Nov. 30, 1921 . . . . .	—	8,552 48
Bills payable Nov. 30, 1921 . . . . .	3,801 17	—
Balance . . . . .	20,957 07	—
	\$725,630 71	\$725,630 71

## FARM DISBURSEMENTS.

	Labor.	Equip- ment.	Feed.	Supplies.	Sundry.	Bedding.	Fertilizer.	Seeds.	Improve- ments.	Totals.
Dairy cattle	\$5,539 81	\$419 55	\$183 37	\$515 59	\$761 30	-	-	-	-	\$7,419 62
Horses	1,365 55	199 89	-	47 05	335 24	-	-	-	-	1,947 73
Sheep	1,225 36	35 10	-	6 77	81 26	-	-	-	-	1,348 55
Live stock	4,426 39	-	9,920 98	-	-	\$2,354 34	-	-	-	12,701 91
Swine	1,319 81	112 58	334 50	2 45	148 36	-	-	-	-	1,917 70
Field crops	4,586 18	-	10 24	387 47	-	-	\$896 92	\$350 58	-	5,843 92
Tools and machinery	480 42	1,520 24	-	488 97	98 07	-	-	-	-	2,388 13
Miscellaneous	2,308 25	-	-	-	-	-	-	-	\$5,728 09	8,623 38
Totals	\$17,251 97	\$2,287 42	\$10,438 85	\$1,458 54	\$1,424 23	\$2,354 34	\$896 92	\$350 58	\$5,728 09	\$42,190 94

## FARM CREDITS.

	Milk.	Stock.	Sundry.	Labor.	Field Crops.	Tools and Machinery.	Improve- ments.	Totals.
Dairy cattle	\$10,014 78	\$1,168 96	\$318 48	-	-	-	-	\$11,502 22
Horses	160 55	15 00	15 00	-	-	-	-	190 55
Sheep	-	751 91	55 00	-	-	-	-	806 91
Live stock	-	-	4 70	-	-	-	-	4 70
Swine	-	798 21	12 00	-	-	-	-	810 21
Field crops	-	-	-	-	\$2,067 83	-	-	2,067 83
Tools and machinery	-	-	-	-	-	\$12 50	-	12 50
Miscellaneous	-	-	-	\$173 04	-	-	\$166 00	339 04
Totals	\$10,175 33	\$2,734 08	\$405 18	\$173 04	\$2,067 83	\$12 50	\$166 00	\$15,733 96

AGRICULTURAL DIVISION.  
*Disbursements and Receipts.*

	Disbursements.	Receipts.
Agronomy . . . . .	\$1,230 72	\$355 97
Animal husbandry . . . . .	671 28	215 50
Dairying . . . . .	36,356 59	27,537 81
Farm . . . . .	42,190 94	15,733 96
Farm management . . . . .	532 58	88 00
Poultry husbandry . . . . .	16,545 92	9,607 08
Rural engineering . . . . .	932 85	215 95
Division totals . . . . .	\$98,460 88	\$53,754 27

*Summary.*

	DR.	CR.
By total Division receipts . . . . .		\$53,754 27
By bills receivable . . . . .		5,536 49
By net apportionment . . . . .		43,495 73
To total Division disbursements . . . . .	\$98,460 88	
To bills payable . . . . .	94 38	
By balance . . . . .	4,231 23	
	\$102,786 49	\$102,786 49

*Inventory of Quick Assets.*

	Nov. 30, 1920.	Nov. 30, 1921.
Inventory of produce . . . . .	\$13,663 93	\$10,487 81
Inventory of cattle . . . . .	17,850 00	18,975 00
Inventory of swine . . . . .	1,171 00	701 00
Inventory of horses . . . . .	3,650 00	3,850 00
Inventory of poultry . . . . .	2,467 50	3,390 00
Inventory of sheep . . . . .	2,885 00	1,842 00
	\$41,687 43	\$39,245 81



HORTICULTURAL DIVISION.  
*Disbursements and Receipts.*

	Disbursements.	Receipts.
Floriculture . . . . .	\$8,143 79	\$4,680 41
Forestry . . . . .	276 53	72 00
General horticulture . . . . .	8,522 66	477 50
Grounds . . . . .	8,306 21	2 75
Horticultural manufactures . . . . .	3,324 25	697 45
Landscape gardening . . . . .	474 47	389 00
Mount Toby . . . . .	3,259 82	1,621 78
Pomology . . . . .	4,910 95	2,635 57
Vegetable gardening . . . . .	6,487 10	3,029 36
Division totals . . . . .	\$43,705 78	\$13,605 82

*Summary.*

	Dr.	Cr.
By total Division receipts . . . . .		\$13,605 82
By bills receivable . . . . .		2,771 39
By net apportionment . . . . .		33,469 18
To total Division disbursements . . . . .	\$43,705 78	
To bills payable . . . . .	40 73	
By balance . . . . .	6,099 88	
	\$49,846 39	\$49,846 39

*Inventory of Quick Assets.*

	Nov. 30, 1920.	Nov. 30, 1921.
Floriculture . . . . .	\$1,500 00	\$2,000 00
General horticulture (live stock) . . . . .	1,855 00	1,285 00
Horticultural manufactures . . . . .	150 00	150 00
Mount Toby . . . . .	4,050 00	660 00
Pomology . . . . .	1,350 00	1,400 00
Vegetable gardening . . . . .	85 00	245 00
	\$8,990 00	\$5,740 00

## EXPENSE OPERATING AND MAINTENANCE.

	Salaries and Labor.	Fuel and Water.	Repairs.	Equipment.	Miscellaneous.	Totals.
General:						
General superintendent	\$4,792 69	-	-	-	-	\$4,792 69
Office	1,242 40	-	-	-	\$221 05	1,463 45
Power plant:						
Heat	12,909 84	\$72,281 38	\$1,665 90	-	17 00	86,874 12
Light	7,651 32	-	684 71	-	-	8,336 03
Tools	-	-	-	-	-	1,150 68
Insurance	-	-	-	\$1,150 68	-	243 00
Annerst Water Company						
Night watchman	1,967 36	2,810 28	-	-	-	2,810 28
Mail service	333 47	-	-	-	-	1,967 36
Water mains	935 09	-	-	-	-	333 47
Steam mains	6,883 55	-	-	-	-	935 09
Electric light circuit	1,258 52	-	-	-	-	6,883 55
Freight and express	-	-	-	-	-	1,258 52
Telephone	2,318 47	-	-	-	1,739 48	2,318 47
Truck	1,146 79	-	-	-	-	1,146 79
Miscellaneous sundry	47 40	-	-	-	-	289 98
Sewers and cesspools	210 76	-	-	-	252 58	210 76
Walks and drives	532 92	-	-	-	-	532 92
Emergency maintenance	1,129 02	-	228 78	-	-	1,429 77
Expert service:						
Architect	1,422 48	-	-	-	-	1,422 48
Engineer	89 00	-	-	-	-	89 00
Auditors	250 00	-	-	-	-	250 00
Fire department	-	-	-	-	61 59	61 59
Totals	\$45,121 08	\$75,091 66	\$2,579 39	\$1,150 68	\$2,606 67	\$126,549 48

## EXPENSE OPERATING AND MAINTENANCE — Continued.

	Electric Repairs.	Plumbing Repairs.	Heat Repairs.	C. and M. Repairs.	Janitor.	Sundry.	Totals.
College buildings:							
Adams Hall	\$132 50	\$79 94	\$786 32	\$322 86	—	\$36 15	\$1,357 77
Animal husbandry building	50	8 56	4 13	12 81	—	—	28 00
Apiary building	3 49	5 01	3 00	6 89	—	—	18 39
Cavalry barn	8 75	15 74	—	883 39	—	—	907 88
Chemical building	1 33	141 41	53 24	132 03	—	—	328 01
Clerk Hall	46 82	90 57	22 51	306 22	—	—	466 12
Cold-storage building	—	2 25	—	3 76	—	—	6 01
Dairy building	110 90	104 42	64 74	334 51	—	—	614 57
Dairy barn and storage	32 82	61 96	15 39	336 29	—	—	446 46
Draper Hall	336 45	854 53	323 07	2,476 91	—	542 66	4,533 62
Drill Hall	15 90	175 45	25 19	106 54	—	—	323 08
Durfee glass house (old)	—	23 97	3 30	58 80	—	—	86 07
Durfee glass house (new)	—	5 20	—	4 97	—	—	10 17
Experiment station, poultry	—	—	—	75 43	—	—	75 43
Fernald Hall	65	193 00	8 56	275 06	—	—	477 27
French Hall	148 51	15 60	8 02	100 05	—	—	362 18
Horse barn	—	11 17	—	355 85	—	—	367 02
Horticultural barn	4 65	55 46	50 29	78 12	—	—	188 52
Hospital	50	23 75	2 71	320 76	—	—	347 72
Mathematics building	—	4 40	—	11 99	—	—	16 39
Microbiology building	25 55	85 60	94 33	206 17	—	—	411 65
Memorial Hall	35 65	64 06	—	311 99	—	—	1,091 07
Physics building	16 79	52 29	10 16	2 74	\$679 37	—	81 98
Piggery	—	4 02	—	24 95	—	—	28 97
Poultry No. 1	24	106 89	9 60	26 33	—	—	143 00
Poultry No. 2	—	—	—	1 64	—	—	1 64
Poultry No. 3	—	14 90	94 52	12 45	—	—	121 87
Poultry No. 4	5 70	45 31	12 95	17 56	—	—	81 52
Poultry No. 5	—	14 82	—	—	—	—	14 82
Poultry No. 8	—	—	—	—	—	—	2 53
Power building	146 61	134 47	182 28	2 53	421 11	—	995 07
Rural engineering building	—	10 08	—	110 60	—	—	123 37
Sheep barn	—	69	—	113 29	—	—	50 84
Stockbridge Hall	432 53	98 51	47 68	50 15	—	—	824 85
Astronomy greenhouse	—	—	2 08	246 13	—	—	3 38
Tool shed (farm)	1 30	—	—	2 64	—	—	2 64

EXPENSE OPERATING AND MAINTENANCE — *Concluded.*

	Electric Repairs.	Plumbing Repairs.	Heat Repairs.	C. and M. Repairs.	Janitor.	Sundry.	Totals.
Turbine house . . . . .	\$311 16	\$24 76	\$120 59	\$51 19	-	\$46 52	\$554 22
Upper plant house . . . . .	-	12 38	1 15	101 69	-	-	115 22
Veterinary building . . . . .	-	8 31	7 25	99 11	-	-	114 67
Waiting station . . . . .	-	-	-	5 57	-	-	5 57
Wildier Hall . . . . .	60	36 12	30 30	55 28	-	-	122 30
Young stock barn . . . . .	6 18	11 58	6 66	53 86	-	-	71 62
East Experiment Station . . . . .	50	263 21	-	505 23	-	-	775 60
East Experiment Station barn . . . . .	-	2 20	-	-	-	-	2 20
West Experiment Station . . . . .	80 35	29 61	73 13	148 09	-	-	331 18
West Experiment Station barn . . . . .	350 61	5 74	12 87	219 30	-	2 00	588 52
North College . . . . .	164 34	44 73	16 56	1,541 10	\$764 50	-	2,333 23
South College . . . . .	129 63	113 02	20 50	1,112 47	863 44	-	2,239 06
Chapel . . . . .	55 00	67 59	638 31	657 92	131 22	-	1,550 04
Bell ringer . . . . .	3 47	1 13	-	-	-	89 18	89 18
Cashier's house . . . . .	-	9 29	25 61	31 26	-	-	35 86
Farm bungalow . . . . .	-	86 34	2 00	29 74	-	-	64 64
Farmhouse No. 1 . . . . .	1 65	108 83	-	682 85	-	-	156 22
Farmhouse No. 2 . . . . .	2 13	8 29	-	158 73	-	-	793 81
Everson house . . . . .	32	47 52	-	8 32	-	-	167 34
Harlow house . . . . .	-	26 48	83 69	11 50	-	-	35 84
Head of Division of Horticulture . . . . .	12	23 80	-	31 18	-	15 70	121 79
Kellogg house . . . . .	1 28	30 51	-	25 59	-	22 50	71 96
Mount Toby house . . . . .	13 62	19 02	11 14	239 12	-	17 86	48 09
President's house . . . . .	89	-	-	59 01	-	-	312 25
Stockbridge house . . . . .	-	-	-	9 70	-	-	78 92
Tillson house . . . . .	-	-	-	-	-	-	9 70
Totals . . . . .	\$2,629 99	\$3,484 49	\$2,873 83	\$13,326 45	\$2,859 64	\$772 57	\$25,946 97

*Summary.*

General . . . . .	.	.	.	.	.	.	\$126,549 48
College buildings . . . . .	.	.	.	.	.	.	24,030 55
College residences . . . . .	.	.	.	.	.	.	1,916 42
Totals . . . . .	.	.	.	.	.	.	\$152,496 45



EXPERIMENT STATION.  
*Disbursements and Receipts.*

	Disburse- ments from Dec. 1, 1920, to Nov. 30, 1921.	Receipts from Dec. 1, 1920, to Nov. 30, 1921.	Apportion- ment for Year ending Nov. 30, 1921.	Balance to Credit.
Administration . . . . .	\$1,573 27	—	\$1,586 63	\$13 36
Agricultural . . . . .	8,828 02	\$798 78	9,000 00	171 98
Agricultural economics . . . . .	453 34	—	500 00	46 66
Botanical . . . . .	2,205 51	—	2,150 00	—55 51
Chemical . . . . .	4,208 81	1,490 48	3,500 00	—708 81
Cranberry . . . . .	4,426 11	6,318 34	4,300 00	—126 11
Entomological . . . . .	622 89	—	600 00	—22 89
Freight and express . . . . .	205 21	—	300 00	94 79
Library . . . . .	721 55	—	591 05	—130 50
Meteorology . . . . .	637 92	—	600 00	—37 92
Microbiology . . . . .	799 94	—	800 00	06
Pomology . . . . .	3,103 26	858 24	3,150 00	46 74
Poultry . . . . .	2,634 16	—	2,900 00	265 84
Publications . . . . .	2,268 53	—	2,400 00	131 47
Salaries . . . . .	69,711 01	—	71,684 84	1,973 83
Treasurer's office . . . . .	358 47	—	400 00	41 53
Veterinary . . . . .	833 02	—	700 00	—133 02
Hatch fund . . . . .	—	15,000 00	—	—
Adams fund . . . . .	—	15,000 00	—	—
State Treasurer, account of schedules	—	73,841 00	—	—
Income remitted to State Treasurer .	9,465 84	—	—	—
	\$113,056 86	\$113,306 84	\$105,162 52	\$1,571 50
Balance beginning fiscal year Dec. 1, 1920.	—	2,862 52	—	—
Balance on hand Nov. 30, 1921 .	3,112 50	—	—	—
Totals . . . . .	\$116,169 36	\$116,169 36	—	—

EXPERIMENT STATION — *Continued.*  
*Comparative Disbursements and Receipts, 1920-21.*

ACCOUNTS.	DISBURSEMENTS.		RECEIPTS.	
	1920.	1921.	1920.	1921.
Administration . . . . .	\$943 03	\$1,573 27	\$1 35	-
Agricultural . . . . .	8,747 21	8,828 02	1,689 80	\$798 78
Agricultural economics . . . . .	434 66	453 34	-	-
Botanical . . . . .	2,046 51	2,205 51	-	-
Chemical . . . . .	3,879 58	4,208 81	2,432 80	1,490 48
Cranberry . . . . .	5,874 74	4,426 11	3,912 35	6,318 34
Entomological . . . . .	514 56	622 89	-	-
Freight and express . . . . .	197 52	205 21	-	-
Horticultural . . . . .	2,329 82	-	16 20	-
Library . . . . .	524 66	721 55	-	-
Meteorology . . . . .	364 58	637 92	-	-
Microbiology . . . . .	848 38	799 94	-	-
Pomology . . . . .	-	3,103 26	-	858 24
Poultry . . . . .	2,690 18	2,634 16	-	-
Publications . . . . .	2,552 05	2,268 53	-	-
Salaries . . . . .	60,444 48	69,711 01	-	-
Treasurer's office . . . . .	359 41	358 47	-	-
Veterinary . . . . .	532 04	833 02	-	-
Hatch fund . . . . .	-	-	15,000 00	15,000 00
Adams fund . . . . .	-	-	15,000 00	15,000 00
Transferred to general maintenance .	-	-	2,935 19	-
State Treasurer, account of schedules	-	-	60,364 07	73,841 00
Income remitted to State Treasurer .	8,044 81	9,465 84	-	-
	\$101,328 22	\$113,056 86	\$101,351 76	\$113,306 84
Less refunds . . . . .	7 69	-	7 69	-
	\$101,320 53	\$113,056 86	\$101,344 07	\$113,306 84
Balance beginning of fiscal year .	-	-	2,838 98	2,862 52
Balance on hand at close of fiscal year	2,862 52	3,112 50	-	-
Totals . . . . .	\$104,183 05	\$116,169 36	\$104,183 05	\$116,169 36

EXPERIMENT STATION — *Concluded.*  
*Analysis of Experiment Station Accounts.*

	Adams Fund.	Hatch Fund.	State Fund.	Totals.
Salaries . . . . .	\$14,487 08	\$14,336 68	\$40,887 25	\$69,711 01
Labor . . . . .	512 82	97 50	15,584 41	16,194 73
Publications . . . . .	—	—	1,666 02	1,666 02
Postage and stationery . . . . .	—	—	2,213 34	2,213 34
Freight and express . . . . .	—	—	250 48	250 48
Heat, light, water and power . . . . .	—	—	500 88	500 88
Chemical and laboratory supplies . . . . .	—	—	2,314 10	2,314 10
Seeds, plants and sundry supplies . . . . .	98 88	—	2,244 43	2,343 31
Fertilizers . . . . .	142 48	—	1,066 46	1,208 94
Feedstuffs . . . . .	8 45	—	1,446 38	1,454 83
Library . . . . .	—	—	816 20	816 20
Tools, machinery and appliances . . . . .	—	—	688 49	688 49
Furniture and fixtures . . . . .	—	—	617 52	617 52
Scientific apparatus and specimens . . . . .	66 13	—	205 27	271 40
Live stock . . . . .	—	—	286 94	286 94
Traveling expenses . . . . .	—	—	2,252 50	2,252 50
Contingent expenses . . . . .	—	—	5 00	5 00
Buildings and land . . . . .	—	—	795 33	795 33
Totals . . . . .	\$15,315 84	\$14,434 18	\$73,841 00	\$103,591 02

*Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1920 . . . . .	—	\$2,862 52
Receipts from State Treasurer . . . . .	—	73,841 00
Receipts from United States Treasurer . . . . .	—	30,000 00
Receipts from other sources . . . . .	—	9,465 84
Total disbursements . . . . .	\$103,591 02	—
Receipts turned in to State Treasurer . . . . .	9,465 84	—
	\$113,056 86	\$116,169 36
Bills receivable Dec. 1, 1920, deducted . . . . .	—	640 87
Bills payable Dec. 1, 1920, deducted . . . . .	169 19	—
	\$112,887 67	\$115,528 49
Bills receivable Nov. 30, 1921 . . . . .	—	1,340 16
Bills payable Nov. 30, 1921 . . . . .	173 73	—
Balance . . . . .	3,807 25	—
	\$116,868 65	\$116,868 65

EXTENSION SERVICE. <sup>1</sup>  
*Disbursements and Receipts.*

CLASSIFICATION.	Disbursements.	Receipts.	Apportionment.	Balance.
Administration . . . . .	\$4,227 18	\$136 92	\$4,200 00	—\$27 18
Animal husbandry . . . . .	994 00	—	900 00	—94 00
Co-operative marketing . . . . .	1,058 09	—	1,500 00	441 91
Correspondence Courses . . . . .	1,310 24	716 85	2,800 00	1,489 76
County agents' work . . . . .	1,187 65	—	1,300 00	112 35
Clothing efficiency . . . . .	424 62	—	—	—424 62
Dairying . . . . .	235 72	—	250 00	14 28
Director's office . . . . .	—	12 52	—	—
Entomology . . . . .	11 26	—	100 00	88 74
Exhibits . . . . .	1,009 98	25 20	1,500 00	490 02
Extension courses at College . . . . .	1,384 74	—	1,150 00	—234 74
Extension schools . . . . .	244 91	—	200 00	—44 91
Farm management demonstration . . . . .	1,520 91	130 40	2,200 00	679 09
Forestry . . . . .	—	—	125 00	125 00
Home demonstration agents . . . . .	3,646 94	109 55	3,500 00	—146 94
Home economics specialists . . . . .	1,312 76	—	—	—1,312 76
Home gardening . . . . .	656 28	—	400 00	—256 28
Horticultural manufactures . . . . .	1,503 18	—	1,500 00	—3 18
Junior Extension work . . . . .	5,683 85	—	4,265 11	—1,418 74
Landscape extension . . . . .	467 83	—	1,100 00	632 17
Lectures . . . . .	49 10	—	50 00	90
Library extension . . . . .	69 47	—	400 00	330 53
Local community organization . . . . .	—	—	100 00	100 00
Methods of extension instruction . . . . .	—	—	100 00	100 00
Nutrition and household management . . . . .	364 40	—	—	—364 40
Plant diseases . . . . .	—	—	100 00	100 00
Pomology . . . . .	1,665 60	—	1,550 00	—115 60
Poultry husbandry . . . . .	1,193 35	—	1,600 00	406 65
Printing . . . . .	6,248 36	—	3,859 89	—2,388 47
Personal services . . . . .	46,884 54	—	47,300 00	415 46
Rural engineering . . . . .	122 58	—	150 00	27 42
Soils and crops . . . . .	563 24	—	1,100 00	536 76
State Treasurer, account of schedules . . . . .	—	84,024 10	—	—
Income to State Treasurer . . . . .	1,131 44	—	—	—
	\$85,172 22	\$85,155 54	\$83,300 00	—\$740 78
Less refunds . . . . .	16 68	—	—	—
	\$85,155 54	\$85,155 54	—	—

<sup>1</sup> Includes State Smith-Lever fund.



EXTENSION SERVICE — *Continued.**Summary.*

	Disbursements.	Receipts.
Balance Dec. 1, 1920 <sup>1</sup> . . . . .	—	\$6,848 30
Receipts Nov. 30, 1921 . . . . .	—	1,131 44
Received from State Treasurer . . . . .	—	84,024 10
Received from United States Treasurer . . . . .	—	31,262 06
Disbursements to Nov. 30, 1921 <sup>1</sup> . . . . .	\$118,127 71	—
Receipts turned in to State Treasurer . . . . .	1,131 44	—
	\$119,259 15	\$123,265 90
Bills receivable Dec. 1, 1920, deducted . . . . .	—	7 50
Bills payable Dec. 1, 1920, deducted . . . . .	339 01	—
	\$118,920 14	\$123,258 40
Bills receivable Nov. 30, 1921 . . . . .	—	14 51
Bills payable Nov. 30, 1921 . . . . .	753 88	—
Balance . . . . .	3,598 89	—
	\$123,272 91	\$123,272 91

<sup>1</sup> Includes Federal Smith-Lever fund.

EXTENSION SERVICE — *Concluded.**Analysis of Extension Service Disbursements.*

	Travel.	Equip- ment.	Supplies.	Postage, Sta- tionery and Small Printing.	Salaries and Labor.	Totals.
Administration . . . . .	\$2,348 37	\$382 34	\$213 70	\$1,276 47	—\$57 30	\$4,163 58
Animal husbandry . . . . .	928 28	1 40	—	80 14	95 65	1,105 47
Co-operative marketing . . . . .	878 76	34 10	29 88	115 35	—	1,058 09
Correspondence Courses . . . . .	85 86	—	43 50	1,175 13	637 04	1,941 53
County agents' work . . . . .	844 05	20 76	22 26	300 58	104 23	1,291 88
Clothing efficiency . . . . .	339 58	1 75	7 15	76 14	5 00	429 62
Dairying . . . . .	226 94	—	—	8 78	223 33	459 05
Director's office . . . . .	—	—	—	—	58 58	58 58
Entomology . . . . .	11 26	—	—	—	—	11 26
Exhibits . . . . .	318 36	38 58	265 66	370 80	133 23	1,126 63
Extension courses at College . . . . .	328 69	25 35	355 16	674 04	631 07	2,014 31
Extension schools . . . . .	55 62	—	60 00	135 89	16 08	267 59
Farm management demonstra- tion . . . . .	567 72	—	—	953 94	129 62	1,651 28
Home demonstration agents . . . . .	2,145 06	65 79	242 47	1,338 24	205 76	3,997 32
Home economics specialists . . . . .	1,269 77	—	8 39	34 60	210 00	1,522 76
Home gardening . . . . .	237 16	—	136 18	282 94	70 85	727 13
Horticultural manufactures . . . . .	1,183 01	26 73	142 26	151 18	18 90	1,522 08
Junior Extension work . . . . .	3,274 25	97 09	149 45	2,157 58	115 15	5,793 52
Landscape extension . . . . .	430 29	1 20	—	36 34	12 50	480 33
Lectures . . . . .	49 10	—	—	—	—	49 10
Library extension . . . . .	—	—	49 85	10 27	—	60 12
Local community organization . . . . .	—	—	—	—	2 00	2 00
Nutrition and household man- agement . . . . .	284 75	—	14 22	65 43	—	364 40
Pomology . . . . .	907 65	211 71	174 23	372 01	—	1,665 60
Poultry husbandry . . . . .	1,096 48	6 60	8 20	82 83	—	1,194 11
Printing . . . . .	92 72	84 35	38 33	5,909 37	293 43	6,418 20
Personal services . . . . .	—	—	—	—	43,162 74	43,162 74
Rural engineering . . . . .	97 91	—	—	24 67	7 00	129 58
Soils and crops . . . . .	501 39	—	50 40	11 45	809 68	1,372 92
	\$18,503 03	\$997 75	\$2,011 29	\$15,644 17	\$46,884 54	\$84,040 78
Less refunds . . . . .	—	—	—	16 68	—	16 68
Totals . . . . .	\$18,503 03	\$997 75	\$2,011 29	\$15,627 49	\$46,884 54	\$84,024 10

## SMITH-LEVER FUND (FEDERAL).

	Disbursements.	Receipts.
Administration . . . . .	\$279 13	-
Animal husbandry . . . . .	39 13	-
District and county agents . . . . .	43 76	-
Home demonstration agents . . . . .	253 10	-
Home economic specialists . . . . .	21 11	-
Junior extension works . . . . .	339 61	-
Nutrition and household management . . . . .	69 05	-
Printing and publications . . . . .	70 22	-
Salaries . . . . .	32,988 50	-
State Treasurer . . . . .	-	\$31,262 06
	\$34,103 61	\$31,262 06
Balance beginning fiscal year Dec. 1, 1920 . . . . .	-	6,848 30
Balance on hand Nov. 30, 1921 . . . . .	4,006 75	-
Totals . . . . .	\$38,110 36	\$38,110 36

## SHORT COURSES.

	Personal Services.	Office.	Laboratory Supplies.	Minor Equipment.	Travel.	Miscellaneous.	Printing.	Totals.
Two-Year Course . . . . .	\$1,386 01	\$1,244 65	\$5,591 17	\$187 96	\$892 48	\$454 40	-	\$9,756 07
Ten Weeks' Winter School . . . . .	1,402 16	176 61	250 07	-	175 00	96 40	-	2,100 24
Summer School . . . . .	2,401 72	102 26	463 40	13 00	36 60	6 89	-	3,023 87
Printing . . . . .	-	-	-	-	-	-	\$628 16	628 16
Personal services . . . . .	37,569 81	-	-	-	-	-	-	37,569 81
	\$42,759 70	\$1,523 52	\$6,304 64	\$200 96	\$1,104 08	\$557 69	\$628 16	\$53,078 75



## SUMMARY.

	Dr.	Cr.
State appropriation . . . . .		\$54,350 00
Amount of receipts . . . . .		4,921 85
Amount of receipts transferred to State Treasurer . . . . .	\$4,921 85	
Department expenditures . . . . .	53,078 75	
Balance unexpended . . . . .	1,271 25	
Totals . . . . .	\$59,271 85	\$59,271 85

## MARKET-GARDENING FIELD STATION.

	Dr.	Cr.
Labor . . . . .	\$5,689 49	
Maintenance . . . . .	3,031 49	
Total . . . . .	\$8,720 98	
State appropriation . . . . .		\$9,072 13
Amount of receipts . . . . .		3,071 14
Amount of receipts transferred to State Treasurer . . . . .	\$3,071 14	
Department expenditures . . . . .	8,720 98	
Balance unexpended . . . . .	351 15	
Totals . . . . .	\$12,143 27	\$12,143 27

## SPECIAL APPROPRIATIONS.

	Date made.	Appropriation.	Amount expended to Date.	Unexpended Balance.
Women's dormitory . . . . .	1919	\$127,400 00	\$127,400 00	-
Engineering study . . . . .	1919	2,000 00	2,000 00	-
Stable for cavalry barn . . . . .	1920	15,000 00	15,000 00	-
Improvements and equipment . . . . .	1921	47,305 22	47,305 22	-
Administration building, Market-Garden Field Station.	1921	10,000 00	7,331 01	\$2,668 99
Chemistry building, architect's fees <sup>1</sup> . . . . .	-	2,000 00	2,000 00	-
		\$203,705 22	\$201,036 23	\$2,668 99
Amount spent previous to Dec. 1, 1920 . . . . .	-	-	-	109,456 38
Amount expended during fiscal year . . . . .	-	-	-	91,579 85
Unexpended balance Nov. 30, 1921 . . . . .	-	-	2,668 99	-
		\$203,705 22	\$203,705 22	\$203,705 22

<sup>1</sup> This payment was authorized by the Auditor's office of the Commonwealth, and is not a special appropriation.

## INVENTORY.

*Land (Estimated Value).*

Angus land	00	\$800
Allen place	500	00
Baker place	2,500	00
Bangs place	2,350	00
Brown land	500	00
Charmbury place	450	00
Clark place	4,500	00
College farm	37,000	00
Cranberry land	12,745	00
George Cutler, Jr., trustee	2,700	00
Dickinson land	7,850	00
Harlow farm	1,584	63
Hawley and Brown place	675	00
Kellogg place	3,368	45
Loomis place	415	00
Louisa Baker place	5,000	00
Market-Garden Field Station	4,800	00
Mount Toby demonstration forest	30,000	00
Newell farm	2,800	00
Old creamery place	1,000	00
Owen farm	5,000	00
Pelham quarry	500	00
Tillson farm	2,950	00
Westcott place	2,250	00
Total	\$132,238	08

INVENTORY — *Continued.**College Buildings (Estimated Value) 1921.*

	Inventory at Beginning of Year.	Per Cent de- ducted.	Value at Beginning of Year less De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Adams Hall . . . . .	-	-	\$127,400 00	\$2,216 70	\$129,616 70
Animal husbandry building . . . . .	\$9,061 06	2	8,879 84	26 00	8,905 84
Apiary . . . . .	2,946 30	2	2,887 37	18 39	2,905 76
Cashier's house . . . . .	1,552 57	5	1,474 94	35 86	1,510 80
Chemical laboratory . . . . .	8,515 55	5	8,089 77	386 36	8,476 13
Clark Hall . . . . .	62,059 90	2	60,818 70	557 37	61,376 07
Cold-storage laboratory . . . . .	10,796 29	2	10,580 36	6 01	10,586 37
Dairy building . . . . .	69,864 34	2	68,467 05	664 70	69,131 75
Dairy barn and storage . . . . .	26,602 92	3	25,804 83	5,153 82	30,958 65
Draper Hall . . . . .	67,073 52	3	65,061 31	3,990 96	69,052 27
Drill hall and gun shed . . . . .	9,270 27	5	8,806 76	439 06	9,245 82
Durfee glass house (old) . . . . .	7,782 83	5	7,393 69	86 07	7,479 76
Durfee glass house (new) . . . . .	11,584 31	5	11,005 09	10 17	11,015 26
Farm bungalow . . . . .	2,576 22	3	2,498 93	64 64	2,563 57
Farmhouse No. 1 . . . . .	2,851 84	3	2,766 28	156 22	2,922 50
Farmhouse No. 2 . . . . .	3,883 05	8	3,572 41	793 81	4,366 22
Fernald Hall . . . . .	72,539 63	2	71,088 84	756 73	71,845 57
French Hall . . . . .	45,744 80	2	44,829 90	994 37	45,824 27
Grounds tool shed . . . . .	221 11	5	210 05	-	210 05
Harlow house . . . . .	2,055 93	5	1,953 13	55 84	2,008 97
Horse barn . . . . .	4,524 55	3	4,388 81	367 02	4,755 83
Head of Division of Horticulture, resi- dence.	2,174 87	5	2,066 13	121 79	2,187 92
Horticultural barn . . . . .	3,627 92	3	3,519 08	188 52	3,707 60
Horticultural tool shed . . . . .	1,665 95	3	1,615 97	-	1,615 97
Horticultural open shed . . . . .	501 38	5	476 31	17 74	494 05
Horticultural manufactures shed . . . . .	3,185 24	5	3,025 98	598 53	3,624 51
Hospital . . . . .	14,560 90	2	14,269 68	347 72	14,617 40
Kellogg house and barn . . . . .	3,243 92	5	3,081 72	71 96	3,153 68
Machinery barn . . . . .	3,509 87	3	3,404 57	2 64	3,407 21
Market-Garden Field Station barn . . . . .	3,194 36	3	3,098 53	-	3,098 53
Mathematical building . . . . .	4,898 61	5	4,653 68	16 39	4,670 07
Microbiology building . . . . .	57,891 13	2	56,733 31	411 65	57,144 96
Military storage . . . . .	225 62	5	214 34	-	214 34
Mount Toby house and barn . . . . .	3,619 19	5	3,438 23	48 09	3,486 32

INVENTORY — *Continued.**College Buildings (Estimated Value) 1921 — Concluded.*

	Inventory at Beginning of Year.	Per Cent de- ducted.	Value at Beginning of Year less De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
North dormitory . . . . .	\$25,186 21	2	\$24,682 49	\$2,233 88	\$26,916 37
Physics laboratory . . . . .	4,579 99	5	4,350 99	81 98	4,432 97
Piggery . . . . .	2,515 94	3	2,440 46	28 97	2,469 43
Poultry department:					
No. 1, demonstration building . . . . .	1,365 56	2	1,338 25	143 06	1,481 31
No. 2, oil house . . . . .	74 92	2	73 42	1 64	75 06
No. 3, brooder killing and fattening laboratory . . . . .	2,285 84	2	2,240 12	121 87	2,361 99
No. 4, mechanics, storage building and incubator cellar . . . . .	3,352 77	2	3,285 71	81 52	3,367 23
No. 5, laying house . . . . .	1,704 59	2	1,650 50	14 82	1,665 32
No. 6, manure shed . . . . .	90 98	2	89 16	—	89 16
No. 7, small henhouse . . . . .	45 79	2	44 87	—	44 87
No. 8, breeding house . . . . .	1,450 17	2	1,421 17	2 53	1,423 70
No. 9, experimental breeding house . . . . .	568 78	2	557 40	—	557 40
No. 10, duck house . . . . .	94 13	2	92 25	—	92 25
No. 11, unit house for 200 hens . . . . .	476 21	2	466 69	—	466 69
No. 12, unit house for 100 hens . . . . .	384 26	2	376 57	—	376 57
Power plant and storage building, in- cluding coal pocket . . . . .	48,020 63	2	47,060 22	995 07	48,055 29
President's house . . . . .	13,074 51	3	12,682 27	312 25	12,994 52
Farm blacksmith shop . . . . .	458 13	3	444 39	—	444 39
Rural engineering building . . . . .	3,503 25	2	3,433 18	123 37	3,556 55
Sheep barn . . . . .	1,371 18	3	1,330 04	50 84	1,380 88
South dormitory . . . . .	38,571 04	2	37,799 62	1,498 60	39,298 22
Stable for cavalry unit . . . . .	—	—	15,000 00	3,141 38	18,141 38
Stockbridge Hall . . . . .	169,031 66	2	165,651 03	824 85	166,475 88
Agronomy greenhouse . . . . .	1,959 98	2	1,920 78	3 38	1,924 16
Stockbridge house . . . . .	1,569 89	5	1,491 40	78 92	1,570 32
Stone chapel . . . . .	28,707 98	2	28,133 82	1,945 90	30,079 72
Turbine house . . . . .	18,246 87	2	17,881 93	554 22	18,436 15
Vegetable plant house . . . . .	4,258 14	5	4,045 23	115 22	4,160 45
Veterinary laboratory and stable . . . . .	21,662 26	2	21,229 01	114 67	21,343 68
Waiting station . . . . .	460 98	2	451 76	5 57	457 33
Wilder Hall . . . . .	33,723 32	2	33,048 85	122 30	33,171 15
Young stock barns . . . . .	5,735 56	3	5,563 49	71 62	5,635 11
Totals . . . . .	\$958,337 47	—	\$1,077,852 66	\$31,273 56	\$1,109,106 22



INVENTORY — *Continued.**College Equipment (Estimated Value).*

Administrative division:		
Dean's office . . . . .	\$600	80
President's office . . . . .	2,699	50
Registrar's office . . . . .	1,204	22
Treasurer's office . . . . .	4,116	39
Agricultural division:		
Agronomy . . . . .	8,565	33
Animal husbandry . . . . .	935	48
Dairy . . . . .	24,377	65
Farm . . . . .	44,159	81
Farm management . . . . .	1,242	05
General agriculture . . . . .	2,638	95
Poultry . . . . .	10,184	52
Rural engineering . . . . .	6,733	83
Domestic science . . . . .	3,289	54
Dining hall . . . . .	25,661	66
Extension . . . . .	12,706	37
General science:		
Apiary . . . . .	2,362	11
Botanical . . . . .	23,985	65
Chemical . . . . .	18,743	61
Entomology . . . . .	5,117	97
Mathematics . . . . .	2,263	00
Microbiology . . . . .	6,326	25
Physics . . . . .	6,836	39
Veterinary . . . . .	10,176	16
Zoölogical and geological . . . . .	17,240	79
Graduate School . . . . .	74	70
Horticultural division:		
Floriculture . . . . .	32,437	83
Forestry . . . . .	2,618	23
General horticulture . . . . .	7,047	00
Grounds . . . . .	2,152	45
Horticultural manufactures . . . . .	5,095	55
Landscape gardening . . . . .	5,566	22
Market-Garden Field Station . . . . .	1,937	23
Mount Toby Reservation . . . . .	3,655	36
Pomology . . . . .	9,164	26
Vegetable gardening . . . . .	3,717	17
Hospital . . . . .	1,003	00
Humanities division:		
Economics and sociology . . . . .	150	72
Language and literature . . . . .	646	50
Library . . . . .	121,121	99
Military . . . . .	1,395	84
Operating and maintenance:		
College supply . . . . .	1,270	26
Fire apparatus . . . . .	1,902	45
General maintenance:		
Office . . . . .	871	35
Carpentry and masonry supplies . . . . .	5,488	20
Electrical supplies . . . . .	4,296	58

INVENTORY — *Continued.**College Equipment (Estimated Value) — Concluded.*Operating and maintenance — *Con.*General maintenance — *Con.*

Equipment . . . . .	\$82,396 77
Heating and plumbing supplies . . . . .	10,354 70
Power plant supplies . . . . .	537 18
Painting supplies . . . . .	984 94
Steam main . . . . .	56,159 38
Lighting lines . . . . .	9,066 74
Janitor's supplies . . . . .	1,185 87
Sewer line . . . . .	14,063 19
Water mains . . . . .	13,445 74
Physical education . . . . .	1,859 71
Rural social science:	
Agricultural economics . . . . .	1,907 57
Agricultural education . . . . .	1,458 53
Rural sociology . . . . .	312 50
Rural social science . . . . .	68 00
Short course . . . . .	1,506 98
Textbooks . . . . .	2,741 75
Trophy room . . . . .	1,200 00
Women's dormitory . . . . .	9,331 00
Total . . . . .	\$662,361 47

*Experiment Station Buildings (Estimated Value).*

	Inventory at Beginning of Year.	Per Cent.	Cost at Beginning of Year, less Per Cent De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Year.
Agricultural laboratory . . . . .	\$14,264 10	2	\$13,978 82	\$784 90	\$14,763 72
Agricultural barn . . . . .	4,329 90	3	4,200 00	2 20	4,202 20
Agricultural farmhouse . . . . .	1,481 70	3	1,437 25	167 34	1,604 59
Agricultural glass house . . . . .	367 55	5	349 17	—	349 17
Cranberry buildings . . . . .	3,242 31	5	3,080 19	—	3,080 19
Plant and animal chemistry laboratory	27,621 23	2	27,068 81	562 05	27,630 86
Plant and animal chemistry barns . .	4,116 62	3	3,993 12	588 52	4,581 64
Plant and animal chemistry dairy . .	1,665 95	3	1,615 97	—	1,615 97
Six poultry houses . . . . .	551 28	2	540 25	75 43	615 68
Entomological glass houses . . . . .	682 33	5	648 21	—	648 21
Tillson house . . . . .	545 45	5	518 18	9 70	527 88
Tillson barn . . . . .	1,028 85	5	977 41	—	977 41
Totals . . . . .	\$59,897 27	—	\$58,407 38	\$2,190 14	\$60,597 52

INVENTORY — *Concluded.**Experiment Station Equipment (Estimated Value).*

Apiary . . . . .	\$155 76
Agricultural Economics Department . . . . .	204 62
Agricultural laboratory . . . . .	7,175 75
Botanical laboratory . . . . .	6,803 58
Chemical laboratory . . . . .	27,086 34
Cranberry Station . . . . .	3,793 78
Director's office . . . . .	5,221 82
Entomological laboratory . . . . .	23,795 55
Meteorological laboratory . . . . .	619 00
Microbiological laboratory . . . . .	2,847 15
Pomology . . . . .	4,708 67
Poultry Department . . . . .	5,891 58
Treasurer's office . . . . .	1,018 00
Veterinary . . . . .	238 20
<hr/>	
Total . . . . .	\$89,559 80

*Summary.*

Land . . . . .	\$132,238 08
College buildings . . . . .	1,109,106 22
College equipment . . . . .	662,361 47
Experiment Station buildings . . . . .	60,597 52
Experiment Station equipment . . . . .	89,559 80
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Total . . . . .	\$2,053,863 09

## Acres.

College estate (area) . . . . .	642.79
Cranberry Station, Wareham (area) . . . . .	23.67
Market-Garden Field Station, Lexington (area) . . . . .	12.00
Mount Toby demonstration forest (area) . . . . .	755.27
Rifle range . . . . .	46.20
Pelham quarry . . . . .	.50
<hr/>	
Total acreage . . . . .	1,480.43

## STUDENTS' TRUST FUND ACCOUNT.

	Disbursements, Year ending Nov. 30, 1921.	Receipts, Year ending Nov. 30, 1921.	Balance on Hand.	Balance brought forward Dec. 1, 1920.
Athletics . . . . .	\$21,317 13	\$21,382 34	—\$2,264 71	—\$2,329 92
Dining hall . . . . .	97,906 67	106,333 54	—936 93	—9,363 80
Keys . . . . .	106 00	111 50	81 00	75 50
Students' deposits . . . . .	58,661 05	60,351 28	15,817 17	14,126 94
Social Union . . . . .	1,660 57	1,864 39	800 56	596 74
Textbooks . . . . .	11,755 93	13,092 81	2,156 96	820 08
Athletic field . . . . .	54 74	—	169 70	224 44
Uniforms . . . . .	263 70	3,653 76	3,517 62	127 56
Cow testing . . . . .	20,285 18	21,442 78	1,516 60	359 00
Totals . . . . .	\$212,010 97	\$228,232 40	\$20,857 97	\$4,636 54
Balance beginning fiscal year . . . . .	—	4,636 54	—	—
Balance on hand Nov. 30, 1921 . . . . .	20,857 97	—	—	—
Totals . . . . .	\$232,868 94	\$232,868 94	—	—

## CONDENSED OPERATING STATEMENT OF THE DINING HALL.

	Operating Charges.	Income.
<b>1920.</b>		
Dec. 1, balance . . . . .	—\$9,363 80	—
<b>1921.</b>		
Nov. 30, Total disbursements . . . . .	97,906 67	—
Outstanding bills . . . . .	1,173 53	—
Total collections . . . . .	—	\$106,333 54
Accounts outstanding . . . . .	—	721 28
Inventory . . . . .	—	10,875 76
Balance . . . . .	9,486 58	—
Totals . . . . .	\$117,930 58	\$117,930 58

ENDOWMENT FUND.<sup>1</sup>

	Principal.	Income.
United States grant (5 per cent) . . . . .	\$219,000 00	\$7,300 00
Commonwealth grant (3½ per cent) . . . . .	142,000 00	3,313 32
Total . . . . .	—	\$10,613 32

<sup>1</sup> This fund is in the hands of the State Treasurer, and the Massachusetts Agricultural College received two-thirds of the income from the same.



## BURNHAM EMERGENCY FUND.

	Market Value Dec. 1, 1921.	Par Value.	Income.
Two bonds American Telephone and Telegraph Company 4s, at \$880 . . . . .	\$1,760 00	\$2,000 00	\$80 00
Two bonds Western Electric Company 5s, at \$990 . . . . .	1,980 00	2,000 00	100 00
One United States Liberty Bond 4½s . . . . .	485 00	500 00	21 25
Louisville Gas and Electric Company 7s . . . . .	500 00	500 00	—
	\$4,725 00	\$5,000 00	\$201 25
Puget Sound Traction Light and Power Company . . . . .	—	—	35 00
Earnings from exchange of bonds . . . . .	—	—	14 22
Unexpended balance Dec. 1, 1920 . . . . .	—	—	297 46
	—	—	\$547 93
Disbursements for fiscal year ending Nov. 30, 1921 . . . . .	—	—	222 12
Cash on hand Nov. 30, 1921 . . . . .	—	—	\$325 81

## LIBRARY FUND.

Five bonds New York Central & Hudson River Railroad Company 4s, at \$860 . . . . .	\$4,300 00	\$5,000 00	\$200 00
Five bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$900 . . . . .	4,500 00	5,000 00	200 00
Two shares New York Central & Hudson River Railroad Company stock, at \$75 . . . . .	150 00	200 00	10 00
Amherst Savings Bank, deposit . . . . .	167 77	167 77	8 44
	\$9,117 77	\$10,367 77	\$418 44
Disbursements for fiscal year Nov. 30, 1921 . . . . .	—	—	418 44

## SPECIAL FUNDS.

*Endowed Labor Fund (the Gift of a Friend of the College).*

Two bonds American Telephone and Telegraph Company 4s, at \$880 . . . . .	\$1,760 00	\$2,000 00	\$80 00
Two bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$900 . . . . .	1,800 00	2,000 00	80 00
One bond New York Central Railroad debenture 4s . . . . .	860 00	1,000 00	40 00
One bond Louisville Gas and Electric 7s . . . . .	1,000 00	1,000 00	70 00
Amherst Savings Bank, deposit . . . . .	143 39	143 39	7 22
One United States Liberty Bond 4½s . . . . .	970 00	1,000 00	42 50
	\$6,533 39	\$7,143 39	\$319 72
Unexpended balance Dec. 1, 1920 . . . . .	—	—	713 47
	—	—	\$1,033 19
Disbursements for fiscal year ending Nov. 30, 1921 . . . . .	—	—	1,022 23
Cash on hand Nov. 30, 1921 . . . . .	—	—	\$10 96

*Whiting Street Scholarship Fund.*

One bond New York Central debenture 4s . . . . .	\$860 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit . . . . .	271 64	271 64	13 72
	\$1,151 64	\$1,271 64	\$53 72
Unexpended balance Dec. 1, 1920 . . . . .	—	—	448 91
Cash on hand Nov. 30, 1921 . . . . .	—	—	\$502 63

SPECIAL FUNDS — *Continued.**Hills Fund.*

	Market Value Dec. 1, 1921.	Par Value.	Income.
Two United States Liberty Bonds $4\frac{1}{8}$ s, at \$970 . . . . .	\$1,940 00	\$2,000 00	\$85 00
One bond American Telephone and Telegraph Company 4s, at . . . . .	880 00	1,000 00	40 00
One bond New York Central & Hudson River Railroad debenture 4s, at . . . . .	860 00	1,000 00	40 00
One bond New York Central Railroad debenture 4s, at . . . . .	860 00	1,000 00	40 00
Three bonds Pacific Telephone and Telegraph Company 5s, at \$910 . . . . .	2,730 00	3,000 00	150 00
One bond Western Electric Company 5s, at . . . . .	990 00	1,000 00	50 00
Boston & Albany Railroad stock, $3\frac{5}{8}$ bonds, at \$130 . . . . .	471 00	362 00	31 68
Amherst Savings Bank, deposit . . . . .	72 75	72 75	3 65
Electric Securities Company bonds, $1\frac{1}{2}$ bonds, at \$900 . . . . .	1,062 00	1,180 00	59 00
Two bonds Louisville Gas and Electric 7s, at \$1,000 . . . . .	2,000 00	2,000 00	140 00
Unexpended balance Dec. 1, 1920 . . . . .	\$11,865 75	\$12,614 75	\$639 33
	-	-	1,341 90
Disbursements for fiscal year ending Nov. 30, 1921 . . . . .	-	-	\$1,981 23
	-	-	299 76
Cash on hand Nov. 30, 1921 . . . . .	-	-	\$1,681 47

*Mary Robinson Fund.*

Amherst Savings Bank, deposit . . . . .	\$142 00	\$142 00	\$7 17
Boston & Albany Railroad stock, $\frac{3}{8}$ share, at \$130 . . . . .	49 00	38 00	3 32
Electric Securities Company bonds, $4\frac{1}{2}$ bond, at \$900 . . . . .	738 00	820 00	41 00
	\$929 00	\$1,000 00	\$51 49
Unexpended balance Dec. 1, 1920 . . . . .	-	-	341 99
Cash on hand Nov. 30, 1921 . . . . .	-	-	\$393 48

*Grinnell Prize Fund.*

Ten shares New York Central & Hudson River Railroad stock, at \$75 . . . . .	\$750 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1920 . . . . .	-	-	245 74
	\$750 00	\$1,000 00	\$295 74
Disbursements for prizes . . . . .	-	-	50 00
Cash on hand Nov. 30, 1921 . . . . .	-	-	\$245 74

*Gassett Scholarship Fund.*

One bond New York Central & Hudson River Railroad debenture 4s, at . . . . .	\$860 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit . . . . .	11 64	11 64	54
	\$871 64	\$1,011 64	\$40 54
Unexpended balance Dec. 1, 1920 . . . . .	-	-	344 73
Cash on hand Nov. 30, 1921 . . . . .	-	-	\$385 27

SPECIAL FUNDS — *Continued.**Massachusetts Agricultural College (Investment).*

	Market Value Dec. 1, 1921.	Par Value.	Income.
One share New York Central & Hudson River Railroad stock	\$75 00	\$100 00	\$5 00
Unexpended balance Dec. 1, 1920 . . . . .	—	—	100 45
Cash on hand Nov. 30, 1921 . . . . .	—	—	\$105 45

*Danforth Keyes Bangs Fund.*

Two bonds Pacific Telephone and Telegraph Company 5s, at \$910	\$1,820 00	\$2,000 00	\$100 00
Two bonds Union Electric Light and Power Company 5s, at \$900	1,800 00	2,000 00	100 00
Two bonds American Telephone and Telegraph Company 4s, at \$880	1,760 00	2,000 00	80 00
One United States Liberty Bond, 4½s . . . . .	970 00	1,000 00	42 50
Interest from student loans . . . . .	—	—	109 44
Unexpended balance Dec. 1, 1920 . . . . .	\$6,350 00	\$7,000 00	\$431 94
Total loans made to students during fiscal year \$2,052 00	—	—	408 12
Cash received on account of students' loans . . 2,587 16	—	—	\$840 06
Excess of cash received over loans made . . . . .	—	—	535 16
Cash on hand Nov. 30, 1921 . . . . .	—	—	\$1,375 22

*John C. Cutter Fund.*

One bond Pacific Telephone and Telegraph Company 5s, at	\$910 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1920 . . . . .	—	—	129 79
Disbursements for fiscal year ending Nov. 30, 1921 . .	\$910 00	\$1,000 00	\$179 79
Cash on hand Nov. 30, 1921 . . . . .	—	—	75 67
	—	—	\$104 12

*William R. Sessions Fund.*

One \$500 bond New York Central & Hudson River Rail- road 6s	\$500 00	\$500 00	\$30 00
Three United States Liberty Bonds, two at \$1,000 and one at \$500, 4½s, at \$970	2,425 00	2,500 00	106 25
One bond Toledo Light and Power Company 7s . . . .	1,000 00	1,000 00	70 00
One bond Conemaugh Light and Power Company 8s . .	1,050 00	1,000 00	80 00
United Electric Light Company . . . . .	\$4,975 00	\$5,000 00	\$286 25
Unexpended balance Dec. 1, 1920 . . . . .	—	—	30 00
Disbursements for fiscal year ending Nov. 30, 1921 . .	—	—	128 99
Cash on hand Nov. 30, 1921 . . . . .	—	—	\$445 24
	—	—	403 85
	—	—	\$41 39

SPECIAL FUNDS — *Concluded.**Alvord Dairy Scholarship Fund.*

	Market Value Dec. 1, 1921.	Par Value.	Income.
One United States Liberty Bond 4½s . . . . .	\$970 00	\$1,000 00	\$42 50
One bond Toledo Light and Power Company 7s . . . . .	1,000 00	1,000 00	70 00
Two bonds Conemaugh Light and Power Company 8s, at \$1.050 . . . . .	2,100 00	2,000 00	160 00
	\$4,070 00	\$4,000 00	\$272 50
United Electric Light Company . . . . .	—	—	60 00
Unexpended balance Dec. 1, 1920 . . . . .	—	—	453 22
	—	—	\$785 72
Disbursements for fiscal year ending Nov. 30, 1921 . . . . .	—	—	17 11
	—	—	\$768 61
Cash on hand Nov. 30, 1921 . . . . .	—	—	

SUMMARY OF BALANCES ON HAND OF THE INCOME FROM FUNDS HELD IN  
TRUST BY THE MASSACHUSETTS AGRICULTURAL COLLEGE.

Burnham emergency fund . . . . .	\$325 81
Endowed labor fund . . . . .	10 96
Whiting Street scholarship fund . . . . .	502 63
Hills fund . . . . .	1,681 47
Mary Robinson fund . . . . .	393 48
Grinnell prize fund . . . . .	245 74
Gassett scholarship fund . . . . .	385 27
Massachusetts Agricultural College investment fund . . . . .	105 45
Danforth Keyes Bangs fund . . . . .	1,375 22
John C. Cutter fund . . . . .	104 12
William R. Sessions fund . . . . .	41 39
Alvord dairy scholarship fund . . . . .	768 61
Total . . . . .	\$5,940 15

I hereby certify that I have this day examined the Massachusetts Agricultural College account, as reported by the treasurer, Fred C. Kenney, for the year ending Nov. 30, 1921. All bonds and investments are as represented in the treasurer's report. All disbursements are properly vouched for, and all cash balances are found to be correct.

CHARLES A. GLEASON,  
*Auditor.*



# HISTORY OF SPECIAL FUNDS.

## Burnham emergency fund:

A bequest of \$5,000 from T. O. H. P. Burnham of Boston made without any conditions. The trustees of the College directed that \$1,000 of this fund should be used in the purchase of the Newell land and Goessmann Library. The fund now shows an investment of . . . . . \$4,000 00

## Library fund:

The library of the College at the present time contains 67,-445 volumes. The income from the fund raised by the alumni and others is devoted to its increase, and additions are made from time to time as the needs of the different departments require. Dec. 27, 1883, William Knowlton gave \$2,000; Jan. 1, 1894, Charles L. Flint gave \$1,000; in 1887, Elizur Smith of Lee, Mass., gave \$1,315. These were the largest bequests and now amount to . . . . . 10,000 00

## Endowed labor fund:

Gift of a friend of the College in 1901, income of which is to be used for the assistance of needy and deserving students . . . . . 5,000 00

## Whiting Street scholarship fund:

Gift of Whiting Street of Northampton, for no special purpose, but to be invested and the income used. This fund is now used exclusively for scholarship . . . . . 1,000 00

## Hills fund:

Gift of Leonard M. and Henry F. Hills of Amherst, Mass., in 1867, to establish and maintain a botanic garden . . . . . 10,000 00

## Mary Robinson fund:

Gift of Miss Mary Robinson of Medfield, in 1874, for scholarship . . . . . 1,000 00

## Grinnell prize fund:

Gift of Hon. Wm. Claflin, to be known as the Grinnell agricultural prize, to be given to the two members of the graduating class who may pass the best oral and written examination in theory and practice of agriculture, given in honor of George B. Grinnell of New York . . . . . 1,000 00

## Gassett scholarship fund:

Gift of Henry Gassett of Boston, the income to be used for scholarship . . . . . 1,000 00

## Massachusetts Agricultural College investment fund:

Investment made by vote of trustees in 1893 to purchase one share of New York Central & Hudson River Railroad stock. The income from this fund has been allowed to accumulate . . . . . 100 00

## Danforth Keyes Bangs fund:

Gift of Louisa A. Baker of Amherst, Mass., April 14, 1909,  
the income thereof to be used annually in aiding poor,  
industrious, and deserving students to obtain an educa-  
tion in said college . . . . . \$6,000 00

## John C. Cutter fund:

Gift of Dr. John C. Cutter of Worcester, Mass., an alumnus  
of the College, who died in August, 1909, to be invested  
by the trustees, and the income to be annually used for  
the purchase of books on hygiene . . . . . 1,000 00

## Alvord dairy scholarship fund:

Gift of Henry E. Alvord, who was the first instructor in  
military tactics, 1869-71, and a professor of agriculture  
1885-87, at this institution. The income of this fund is  
to be applied to the support of any worthy student of said  
College, graduate or postgraduate, who may be making  
a specialty of the study of dairy husbandry (broadly  
considered) with the intention of becoming an investi-  
gator, teacher, or special practitioner in connection with  
the dairy industry, provided that no benefits arising  
from such fund shall at any time be applied to any person  
who then uses tobacco in any form, or fermented or  
spirituous beverages, or is known to have done so within  
one year next preceding . . . . . 4,000 00

## William R. Sessions fund:

In accordance with the request of my deceased wife, Clara  
Markham Sessions, made in her last will, I bequeath to  
the trustees of the Massachusetts Agricultural College,  
Amherst, Mass., the sum of \$5,000, it being the amount  
received by me from the estate of the said Clara Mark-  
ham Sessions. The said \$5,000 to be kept by the said  
trustees a perpetual fund, the income from which shall  
be for the use of the Massachusetts Agricultural College;  
and according to the further request of my deceased wife,  
made in her last will, this is to be known as the William R.  
Sessions fund, and is to be a memorial of William R. Ses-  
sions; and it is my special request that the said trustees  
shall make record of the fact that this fund came from  
the estate of my deceased wife, Clara Markham Sessions,  
in accordance with her request made in her last will . . . . . 5,000 00

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\$49,100 00

FRED C. KENNEY,

*Treasurer.*

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MASSACHUSETTS  
AGRICULTURAL COLLEGE

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REPORT OF THE PRESIDENT  
AND OTHER OFFICERS OF  
ADMINISTRATION



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1922



# THE M. A. C. BULLETIN AMHERST, MASSACHUSETTS

VOLUME XV      JUNE, 1923      NUMBER 5

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AGRICULTURAL COLLEGE: JAN., FEB., MARCH, MAY,  
JUNE, SEPT., OCT., NOV. ENTERED AT THE POST  
OFFICE, AMHERST, MASS., AS SECOND CLASS MATTER

## THE SIXTIETH ANNUAL REPORT OF THE MASSACHUSETTS AGRICULTURAL COLLEGE

PART I.—THE REPORT OF THE PRESIDENT  
AND OTHER OFFICERS OF ADMINISTRATION  
FOR THE FISCAL YEAR ENDED NOV. 30, 1922



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APPROVED BY THE  
COMMISSION ON ADMINISTRATION AND FINANCE

# The Commonwealth of Massachusetts

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DEPARTMENT OF EDUCATION, Boston, February 6, 1923.

*To the Honorable Senate and House of Representatives.*

GENTLEMEN:— In accordance with the provisions of section 32 of chapter 30 of the General Laws, I transmit to you herewith, for the use of the General Court, the annual report of the Massachusetts Agricultural College for the year ending November 30, 1922.

Respectfully yours,

PAYSON SMITH,  
*Commissioner of Education.*

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MASSACHUSETTS AGRICULTURAL COLLEGE,  
AMHERST, NOV. 29, 1922.

*To the Commissioner of Education.*

SIR:— On behalf of the trustees of the Massachusetts Agricultural College I have the honor to submit herewith Part I of the sixtieth annual report of the trustees, for the fiscal year ended November 30, 1922, this being the report of the president of the college and other officers of administration to the corporation.

Respectfully yours,

KENYON L. BUTTERFIELD,  
*President.*



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### Members of Advisory Board of Education

*Ex officio* THE COMMISSIONER OF EDUCATION, *Chairman*

Term expires

1923.	SARAH LOUISE ARNOLD . . . . .	Riverbank Court, Cambridge
1923.	MRS. ELLA LYMAN CABOT . . . . .	1 Marlborough Street, Boston
1924.	WALTER V. McDUFFEE . . . . .	Central High School, Springfield
1924.	ARTHUR H. LOWE . . . . .	Fitchburg
1925.	A. LINCOLN FILENE . . . . .	426 Washington Street, Boston
1925.	THOMAS H. SULLIVAN . . . . .	Slater Building, Worcester

### Massachusetts Agricultural College

KENYON L. BUTTERFIELD, *President*

#### TRUSTEES

*Ex officio* HIS EXCELLENCY CHANNING H. COX

*Ex officio* PAYSON SMITH, *Commissioner of Education*

*Ex officio* ARTHUR W. GILBERT, *Commissioner of Agriculture*

*Ex officio* KENYON L. BUTTERFIELD, *President of the College*

Term expires

1924.	HAROLD L. FROST . . . . .	Arlington
1924.	FRANK GERRETT . . . . .	Greenfield
1925.	CHARLES H. PRESTON . . . . .	Danvers
1925.	CARLTON D. RICHARDSON . . . . .	West Brookfield
1926.	DAVIS R. DEWEY . . . . .	Cambridge
1926.	JOHN F. GANNON . . . . .	Pittsfield
1927.	ARTHUR G. POLLARD . . . . .	Lowell
1927.	GEORGE H. ELLIS . . . . .	Newton
1928.	ELMER D. HOWE . . . . .	Marlborough
1928.	ATHERTON CLARK . . . . .	Newton
1929.	NATHANIEL I. BOWDITCH . . . . .	Framingham
1929.	WILLIAM WHEELER . . . . .	Concord
1930.	CHARLES A. GLEASON . . . . .	North Brookfield
1930.	JAMES F. BACON . . . . .	Boston

#### OFFICERS OF THE TRUSTEES

HIS EXCELLENCY CHANNING H. COX, *President*

CHARLES A. GLEASON of North Brookfield, *Vice-President*

RALPH J. WATTS of Amherst, *Secretary*

FRED C. KENNEY of Amherst, *Treasurer*

CHARLES A. GLEASON of North Brookfield, *Auditor*

### Department of Education

Division of Elementary and Secondary Education and Normal Schools

Division of Vocational Education

Division of University Extension

Division of Education of Aliens

Division of Public Libraries

Division of the Blind

Teachers' Retirement Board

Massachusetts Nautical School

Massachusetts Agricultural College

Bradford Durfee Textile School, Fall River

Lowell Textile School

New Bedford Textile School

## REPORT OF THE PRESIDENT OF THE COLLEGE.

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*Gentlemen of the Corporation.*

### REVIEW OF THE YEAR.

#### Death of Dr. James B. Paige.

After a leave of absence of nearly one and a half years on account of illness, Dr. James B. Paige died October 5, 1922. Dr. Paige was a graduate of the Massachusetts Agricultural College in the class of 1882; subsequently he pursued the study of Veterinary Science at Montreal Veterinary College, McGill University, and in the Thierartzlichen Hochschule, Munich, Germany. He joined our teaching staff in 1890 as professor of Veterinary Science and subsequently became Head of the Department. In this capacity he directed not only the teaching but also the research of the Department, and in later years had charge of the work developed under the poultry disease elimination law. From 1909 to 1911, he served as Dean of the College in the absence of Dean George F. Mills. In the passing of Dr. Paige, the College lost an efficient teacher and a faithful servant. The following tribute was accepted by the faculty at a recent meeting:

*To the memory of James Breckenridge Paige, D. V. S., member of the class of 1882 and of the faculty of the Massachusetts Agricultural College.*

In the death of James Breckenridge Paige, the Massachusetts Agricultural College has lost a distinguished alumnus, teacher and friend. His connection with the college covered a period of over forty years. He served the college with distinguished success as a teacher, investigator, and administrator; he also gave valuable service to the Commonwealth as a member of the General Court.

In the discharge of these responsibilities he served his country and college with staunch integrity. He was a man of high ideals and firm principles, manifested both in his relations with his fellow teachers and students and in his devotion to the search for truth. His principles were the result of long and conscientious thought, and once determined were courageously supported in the face of every difficulty. We hold him in grateful memory as a patriotic citizen, a loyal colleague, a close personal friend.

#### Reorganization of the Department of Veterinary Science.

Following the retirement of Dr. Paige, the Department of Veterinary Science was reorganized as the Department of Veterinary Science and Animal Pathology with Dr. George E. Gage as Professor and Head of the Department. Dr. Gage joined our staff in 1911 and, with the exception of an absence for war service, has been in the employ of this institution since that date. He is a graduate of Clark University with the class of 1906, and pursued graduate study at Yale University from which he received the degree of M.A. in 1907 and of Ph.D. in 1909. During the war he served as captain in the Sanitary Corps of the army and spent several months in France.

#### Retirement of Major Frederick E. Shnyder.

As a result of the policy of the War Department to reduce materially its number of commissioned officers, Major Frederick E. Shnyder was in November placed upon the retired list. In 1920-21 Major Shnyder served as Assistant Professor of Military Science and Tactics in our institution with Col. Richard W. Walker, and upon the transfer of the latter to another post, Major Shnyder was in 1921 made Commandant. Under his direction the standard of excellence in military

drill has been constantly elevated. He was respected and liked by the students and his retirement was cause for sincere regret by students and faculty alike.

Major Herman Kobbé, who has been Assistant Professor of Military Science and Tactics since 1921, succeeds Major Shnyder as Commandant. Being thoroughly familiar with the development of the military work at this institution and having the confidence of the faculty and students, Major Kobbé will doubtless continue to maintain a high standard for the military work here.

Our good fortune in having a cavalry unit assigned to the college — one of but a half dozen in the United States — is exemplified in the increasing popularity of the military drill. We now have sixty horses from the War Department with a liberal complement of soldiers and supplies. A major and two captains are assigned for instruction service. That the students are responding to the opportunity is shown by an enrollment in the advanced course of 9 seniors and 16 juniors. The Reserve Officers Training Corps is thoroughly justifying itself so far as this College is concerned, both from the standpoint of enabling the students to get the maximum educational value from the military discipline and in the training of reserve officers for the army.

### **Withdrawal of Professor Lockwood.**

Professor W. P. B. Lockwood, upon his request, has been relieved of his duties as Professor of Dairying and Head of the Department. This position he had held since 1909; during this period of service he rendered conspicuous service not only to the College but to the dairy interests of the state as well. Under his direction Flint Laboratory was built and equipped, and the "major" in dairying organized. Professor Lockwood is a man of unusual administrative ability and was constantly called upon to work out problems not immediately connected with his department. For example, he organized the class schedule on a permanent and satisfactory basis; this task was a difficult one due to the constantly increasing number of courses which were being placed in the curriculum as well as to the development of the major system of studies. During the war, Professor Lockwood was one of our most valuable men in organizing various types of public safety work. More recently he gave considerable attention to the work of vocational counselling of students. After the close of the war, Professor Lockwood became interested in the promotion of a more extended use of milk and other dairy products on a New England basis; and for two and one-half years before his retirement from the Head of the Department gave largely of his time to this educational promotion work. Professor Lockwood is still retained on part time pay as Professor of Extension Dairying. Professor H. F. Judkins is serving as acting Head of the Department of Dairying.

### **Resignations.**

During the year there were fewer resignations from the professional and clerical staffs than in any of the preceding five years. There were twelve resignations from the professional staff, nineteen from the clerical and secretarial staff, and two from other salaried positions. The list of resignations does not include any department head. It appears that for the present at least the serious over-turn of staff due to inadequate salaries has been partially checked. We still fail, however, to pay our men in the more responsible positions salaries which compare favorably with those paid men holding similar positions elsewhere.

### **Commencement.**

The usual commencement exercises were held June 23 to 27, the commencement address on June 27 being given by Bishop Francis J. McConnell of Pittsburgh, Pennsylvania. The degree of B.Sc. was conferred upon 94 men and 5 women; the degree of M.Sc. conferred upon 3 men and 1 woman; the degree of Ph.D. upon 2 men.



### **Burning of the Chemistry Laboratory.**

Early in the morning of September 6, the old chemistry laboratory was completely destroyed by fire. The building was valued in the college inventory at about \$8,000 but its replacement value was several times that amount. In spite of considerable salvaging the loss on equipment is estimated at about \$18,000. The College immediately requested the State Department of Public Safety to make an investigation as to the cause of the fire. In its judgment the fire was caused by the breaking and consequent leaking of nitric acid on to the wood work of a shelf and partition. While this building was a sort of "standing joke" and had even been characterized by an investigating committee as "a disgrace to the Commonwealth", its passing not only caused considerable inconvenience and loss, but is to be regretted as a matter of sentiment. It was the first of the College buildings to be erected for class purposes; it had been used by probably every four-year student throughout the history of the institution; and it was in this building where one of the great teachers of the College, Dr. Goessmann, did his work and where he trained some of the ablest and most useful of the alumni of the College.

### **Fire Protection.**

Beginning some fifteen years ago there was instituted a system of fire protection at the College which it was hoped would prevent serious fires. Two night watchmen each make three or four rounds of the entire property each night; hand fire extinguishers are found on every floor of every building; the College itself possesses some 1050 feet of hose and two hose carts, one of which has a forty-gallon chemical tank. When the town of Amherst purchased its fire truck some eight or ten years ago, the College contributed a thousand dollars on condition that the truck should be equipped with a pump, the fear being that for some of the buildings the existing water pressure is not sufficient. Curiously enough the first test of this pump after it was purchased, was made on the chemistry building itself and the stream was thrown many feet above the roof from the lowest point surrounding the building. In addition to these precautions one of the best fire chiefs in western Massachusetts inspected the institution and made a number of suggestions concerning protection. After the chemistry fire the Department of Public Safety was asked to make still another survey and the State Fire Marshal himself as well as one of his deputies has gone over the institution. The final recommendations from this Department are not yet at hand but will be submitted as soon as they come to our hands.

### **Legislative Appropriation in 1922.**

The legislature of 1922 provided special appropriations for the undertaking of three major projects, namely, the construction of a new chemistry laboratory, improvements at the power plant, and the purchase of the "Brooks Farm."

The new chemistry building is in process of erection and it is hoped it will be ready for occupancy by the beginning of the next fall term. The reduction of the requested appropriation by \$50,000 necessitated a severe cut in equipment and some changes in the building. We are to have at last, however, a thoroughly modern and well built chemistry building, substantially fire proof, well arranged, and planned for expansion. When the building is completed a full description will be recorded.

The main improvements at the Power Plant made possible by the Legislative appropriation of \$63,000 are: 2 405 horse power Heine boilers with equipment, including stokers, feed pump, and water heater; 1 300 kilowatt generator and turbine.

The acquisition of the Brooks Farm is particularly fortunate at this time. Owing to the erection of Stockbridge Hall, Flint Laboratory, Abigail Adams House and

the chemistry laboratory, serious encroachments in recent years have been made upon the test plots of the Experiment Station; furthermore the institution has not had suitable land which it could devote to experimental work in tobacco and onion problems, which have in recent years brought serious losses to farmers in the Connecticut Valley. The Brooks farm has been designated by the Trustees as the "William P. Brooks Experimental Farm" and will be used primarily for the purpose of research.

### **Gifts to the College.**

During the past year three bequests of note have been made to the College as follows:

- I. "Massachusetts Agricultural Society Loan Fund" of \$500.  
The purpose of this loan is to assist students, with preference for those planning to pursue agricultural work, to pay their college expenses.
- II. Gift of \$10,000 from the Bay State Agricultural Society, on the following terms:  
"The Bay State Agricultural Society gives to the Trustees of the Massachusetts Agricultural College the sum of \$10,000 and some \$500 accumulated interest, to be held by them and to be known as the J. D. W. French Fund.  
"It is our desire, as Mr. French was especially interested in Dairying and Forestry, that the Trustees use the income from this fund, so that in their judgment it will do the greatest good to students in dairying and its allies, also Forestry, either as scholarships, loans, or prizes. We should prefer, however, that when it seems most advisable, the income be used to help pay the expenses of a judging team to go from the Massachusetts Agricultural College to the National Dairy Show or National Live Stock Show."
- III. Land from the Cornelia Warren estate at Waltham, including approximately 54 acres and certain farm buildings. Because of the advantageous location of this land as well as its adaptability for experimental work, and after careful consideration by the Trustees the conclusion has been reached that the interests of the market gardeners will be better served by disposing of the present Market Garden Field Station and equipment at North Lexington and re-establishing the Station at Waltham. Consequently a bill has been submitted for consideration by the forthcoming legislature authorizing the Trustees to dispose of the Market Garden Field Station at North Lexington with the understanding that the work will be re-established at Waltham.

### **Enrollment of Students.**

In courses of Collegiate Grade: This autumn the registration of students in work of collegiate grade is 537, approximately the same as in 1921. The entering class numbers 187 as compared with 162 of a year ago and 135 of two years ago. Owing to the large number of last year's freshman class who failed in their studies, the present sophomore class is unusually small. The number of graduate students is approximately the same as last year, as is also the number of special students. The total number of women students is 49, twenty of whom are entered with the freshman class. Of the 32 girls who were enrolled in the four year course of a year ago but 19 returned this autumn. Of the remainder some failed in their college work, but the majority transferred to other institutions in order to secure training in departments of work not offered at this institution.

In the Two-Year Course: There is a decrease in the enrollment of Two-Year students. In 1920 the enrollment numbered 277, in 1921, 293, and in 1922, 257. Instruction in "unit" courses to Federal Board students has been discontinued, it now being the policy of the Federal government to centralize instruction of this character in fewer institutions, each caring for a larger number of students than formerly.

In the Summer School and Other Short Courses: The Summer School of 1922 had an enrollment of 186 students. This was smaller than in the preceding two years, due to the fact that the Summer Training Courses organized by the Department of Education were this year given at the North Adams Normal School.



**Total Enrollment:** The total enrollment this autumn is 803, of whom 537 are enrolled in work of degree grade and 266 in the various short courses. During the year the total number of students registering at the College, including the classes graduated in June from the Two-Year and Four-Year Courses, has been approximately 1,300. (For details see pages 30, 31.)

### **Attendance at Agricultural Colleges.**

Recently statistics have been gathered listing the attendance at the agricultural colleges of the country during the past three or four years. It was well known, of course, that the war practically closed our colleges for all real college work. But since the war there has been a tremendous influx of students into many of our colleges. However, nearly every agricultural college in the country shows a decrease of attendance during the past three years, in some cases amounting to a loss of a third. Our own College has just held its own during this period with respect to four year students, and inasmuch as each freshman class has been larger than the preceding one, it would appear that we are again on the upward curve. Probably the agricultural depression in New England is felt somewhat less than it is in the great agricultural areas where conditions are such as to discourage young men training themselves for practical agricultural pursuits.

### **Review of the Year in Academic Departments.**

In June there was submitted to the faculty and alumni a report on the course of study made by a committee appointed for this purpose by the Associate Alumni; the chairman of this committee was Herbert J. Baker, 1911, Director of Extension Service in Connecticut. The committee consumed nearly a year in its investigation and made a careful inquiry among alumni and former students as well as the faculty and undergraduates. The report was one of the most comprehensive studies which has been made of our curriculum problems and called to the attention of the faculty and alumni many fundamental problems which confront not only our institution but probably every institution as well. The report met with general favor among the faculty and as rapidly as possible the principal recommendations will be put into operation.

The work of the freshman year was modified for the class entering this autumn. Beginning with this class also the so-called M. I. T. system of evaluating credits was adopted. It is proposed to make this plan of evaluating credits applicable to all future classes entering the College; also to gradually revise the course of study as the class entering in 1922 advances toward graduation; such a procedure will avoid a general reorganization of the curriculum and the confusion attendant thereon.

During the year, Dr. Alexander E. Cance, Head of the Department of Agricultural Economics, spent considerable time in Washington at the request of the Secretary of Agriculture to assist in the Agricultural Conference called by President Harding and to advise relative to the organization of research work in the Federal Bureau of Markets.

From an address recently made by Professor H. B. Dorner, Head of the Department of Floriculture at the University of Illinois it appears that the Department of Floriculture at this institution is the oldest separate Department of Floriculture in the United States; that it ranks third in the amount of glass used in floricultural work, being surpassed by the University of Illinois and Iowa State College; and that it ranks third in amount of funds appropriated for floricultural work, being exceeded by Cornell University and the University of Illinois.

The laboratory space available for the Department of Horticultural Manufactures is so restricted that this last year it became necessary to place a limit upon the number of students electing courses in this Department. The relief which will be secured by a laboratory for this Department is greatly desired both by students and members of the Department.

### **The Infirmary.**

Dr. Marshall, who has charge of the infirmary, again calls attention to the present inadequate facilities afforded by the present infirmary accommodations and says in part:

The quarters are inadequate. I sincerely and fervently hope some way may be found to provide the main hospital. The number of patients in sickness other than communicable is growing, each year making a continuous demand upon our facilities. Further, these wards we now have or cottages designed for infectious diseases were never intended for permanent dwellings for nurses or living quarters.

The coming of young ladies to the institution has brought new difficulties, for the two sexes cannot be handled together with economy and satisfaction in the present cottages. When some drastic epidemic, as the influenza, comes, I dread to think of what may happen. If death occurs to a sick student lodged at Draper Hall or elsewhere we are likely to be blamed for years after. *Some action is very much needed.*

### **SOME IMMEDIATE PROBLEMS.**

For some while it has been my custom to treat in this annual report some one outstanding theme concerning College policy or need. This year there is no one subject that seems to call for major discussion; on the other hand we are facing a number of questions of considerable consequence. As briefly as possible, I wish to call some of these to your attention.

### **Administrative Relations.**

You will recall that I appeared in August, 1921, before the Commission on State Administration and Expenditures and made a frank statement concerning the operations of the present laws as they affect the College. We all hoped that the Commission would make recommendations which, if enacted into law, would give us substantial relief, and it was a matter of great regret that this did not happen. The present plan of control, as applied to an educational institution, is based on a fundamental fallacy, namely, that centralized control of expenditures secures greatest efficiency. We do not ask to be relieved of overhead restraint. We have never even suggested that we be free from responsibility to the Legislature. We do ask for a set of laws and regulations that will give us complete responsibility of management, under such audits, reviews, inspections, or checks as are thought necessary both to the public good and to our own effectiveness.

### **"A State University."**

The State Commission on Technical and Higher Education visited the college on November 15, spending the entire day here. We outlined to the Commission the present agricultural work of the College, indicated the importance of developing the institution more completely as a "food-supply college", and stressed the wisdom of conserving and promoting these two aims of the College even if enlargement of scope in other fields might eventually seem wise. We cannot, of course, anticipate the report of the Commission, but it is obvious that if there is to be in Massachusetts any increase in facilities for higher education at public expense, the policy and probably the scope of the College will be markedly if not profoundly affected.

### **Scholarship and Student Activities.**

A committee of the Alumni, a committee of the Faculty, and a committee of students considered last year the whole problem of "student activities", and their report is now under consideration by the Faculty with reference to the possibility of definite changes in some of our plans. Most teachers probably have a feeling



that athletics and other student activities are overstressed in these days. Possibly the truth is not that too much time and thought are given to these matters, but that not enough time and enthusiasm are given to scholarship. With most students there is probably a good deal of time now wholly wasted, going neither to the activities on the one hand nor to the studies on the other.

### **Interchurch Student Secretary.**

We all admit the importance of religious education, and yet we find it difficult to agree upon a plan which will be effective and still not offend religious beliefs or differences. This, of course, is especially true in a state institution. For many years now our system of morning chapels, weekly assemblies, and the plan of Sunday chapels for a part of the year voted by the student body, seems to have worked very well. A student is excused from all of these exercises if his request is based upon religious scruples. However, it has long been felt that this system was not enough, and various efforts have been made to provide more fully both religious education and counsel. Many students these days are puzzled concerning religious questions, and they need a friendly, wise man whose business it is to try to help them. Various national church boards finally agreed to assist financially, provided funds could be raised from other private sources, such as students, alumni, and friends of the College. This has been done and the Advisory Board employed Rev. John B. Hanna to become the Interchurch Student Secretary. Mr. Hanna entered into his task with great enthusiasm and the plan gives promise of being a great success. It involves the College in no expense.

### **Course of Study.**

Already, in the review of the year, reference has been made to the report of the Alumni Committee on course of study and as indicated steps have already been taken to carry out some of the recommendations. It is slow work revising a course of study. It must be done cautiously. There are many practical details to reconcile as well as fundamental considerations to be agreed upon, particularly at the time when educational principles are under sharp discussion with wide divergence of views, is it important to make haste slowly.

It is sometimes thought that State supported institutions may well have lower standards of scholarship than endowed institutions. I do not agree. It should be the policy of a State supported institution to give as wide an opportunity as possible for students to enter, but the standards of work within the institution itself should be high, if not exacting. At any rate, the diploma and degree from a State institution should certify quite as much in the way of thoroughness and quality of work as a similar degree from any other institution. In connection with this problem of course of study, I may say that personally that I have had a growing conviction that the first year of attendance in the four-year course should be made a thoroughly effective year of testing for the student. The course should be required in all particulars and it should be a time of adjustment for the student in order that he may make up deficiencies, choose his major line of study, learn how to master his lessons, to make and maintain his personal program and schedule, and in other ways to orient himself. He should have the best of teaching and sufficient personal counsel and guidance to lead him, if possible, to "find himself". No student should be admitted to work in the upper three years unless he gives promise of reasonably successful prosecution of the work there required.

### **Graduate School Problems.**

A special committee on the work of the Graduate School was appointed last spring, and the graduate staff has accepted their report. No radical changes are made. One of the two principal recommendations looked toward the broadening and liberalizing of the course of study for graduate degrees, thus preventing too narrow specialization; and the other accepted a policy of granting special degrees

for rather specialized professional work: we already give, for example, the degree of "Master of Landscape Gardening." It is proposed to offer these special professional degrees only as there seems to be a rather clearly developed recognition of what is essentially a new profession.

### **Alumni Endowment Committee.**

Before the war a committee of alumni was appointed to consider the question of private gifts to the institution. The committee has recently been reconstituted with Professor C. S. Plumb '82 as chairman, and plans are under way for rather thorough organization of the work of pressing the claims of the College upon individuals. There is no reason why private gifts coming from people interested in education and especially in agriculture, should not be available. A growing educational institution always has needs far beyond any possible source of income. Moreover, there are always in a State institution many demands which it is difficult to supply from State funds, sometimes because they are insufficient, sometimes because there is a prejudice against such expenditures. Moreover, as a college of agriculture like any other institution renders such a fundamental service to the welfare of society, there is the same argument for private gifts as there is on behalf of the endowed institution. It is believed that many individuals quite outside of the alumni body, once they understand the work and needs of an institution like ours, may be persuaded either directly or in their wills to make substantial gifts to the institution.

### **Professional Improvement.**

I trust that your Board of Trustees may soon announce a plan for encouraging the professional improvement of members of the staff. We have here a problem of first importance, not only because we need to give the members of the staff every chance to keep growing, but because with the scale of salaries as it is we must give some measure of real and substantial encouragement. Details of such a plan are of importance, but the main thing is to have a general policy in operation so that the staff may make their own personal plans for taking advantage of it.

### **Town Representatives.**

Two years ago we inaugurated a plan of having a College representative in each town and city of the Commonwealth. At the present time we have two hundred and sixty-four. These men are, of course, serving without any perquisites and are rendering a real service to the College. We send them monthly bulletins of information. We ask them to let us know about prospective students, to distribute publicity material now and then, and this winter we hope to bring them together into county groups, in order to tell them more about the College. Many of these town representatives are alumni of the College.

### **Administrative Organization.**

The administrative officers of the college are now considering a long list of suggestions looking toward the need of changes of organization of the institution on the administrative side. We are endeavoring to determine the function of different bodies such as the faculty, administrative officers, committees, etc., as well as to work out a plan of operation that shall minimize machinery while at the same time giving a business-like and effective administration.

### **Self-study of Expenditures and Questions of Reducing Costs.**

There is little doubt but during the past few years the per capita cost of instruction at the College has increased. Some of this is due to higher prices for supplies as well as an increased use of supplies. The College coal bill for example, in 1913 was \$20,000, in 1923 it is estimated that it will be \$72,000. Increase in salaries, thoroughly justified, nevertheless means increased per capita cost of instruction.



The appreciably smaller attendance in four year work since the war is one of the material causes of this increase. We of the faculty are not unmindful of this situation and not only are we endeavoring to be as economical as possible, but material has been gathered in a sort of self-study of the institution which we hope may be useful in discovering opportunities for still further savings without impairing the quality of the work.

### **The Building Program.**

Until the future policy of the College and its place in the system of education in the Commonwealth is more fully determined it may not be possible to carry out the plan which we have discussed in former years of announcing a long-term building program. But we do need to consider at this time what shall be the next one of the larger buildings which we shall ask of the Legislature. There seem to be three of particular importance, namely, library, gymnasium and armory, and dormitories. I have taken occasion to sound alumni sentiment and find it somewhat divided, with the majority perhaps in favor of dormitories as the first need. Students favor the gymnasium. Personally I favor the gymnasium.

### **Massachusetts Food Supply Program.**

In my report for 1917 I called attention to the growing conviction on the campus that the approach to the problem of agriculture must be made from the standpoint of the consumer, and that consequently not only would our policy be affected by such considerations but that also this institution was particularly well equipped and must hereafter consider it its duty to become essentially a food supply institution. Evidences of the soundness of this decision continue to multiply. The United States Department of Agriculture has recently instituted rather thorough-going studies of consumption as well as distribution. The great farmers' organizations are at present particularly concerned in economical methods of distributing farm products, and manufacturers are beginning to show concern over the place of food supply in their problem. Nearly two years ago a campus committee was organized to study this whole question by making an analysis of the problem itself and then indicating what this institution can and should do in the premises. I trust that the committee report will be made available during the coming year. I regard this move as one of the most significant that the College has ever taken, not only from the standpoint of increased possibilities of usefulness to the Commonwealth, but because of enlargement of scope and breadth of the work of the College itself.

## **LEGISLATIVE BUDGET, 1923.**

### **Projects for Permanent Improvement.**

*Chemistry Laboratory, \$150,000.* — The Legislature of 1922 appropriated \$150,000 for the construction and equipment of a Chemistry Laboratory with the understanding that an additional appropriation of \$150,000 would be made by the Legislature of 1923. On this basis, contracts have been awarded for the construction of the laboratory, and the work is at this date well advanced.

*Laboratory for Horticultural Manufactures, \$38,000.* — The importance of utilizing various by-products of the farm which formerly were wasted, such as fruit and vegetables, was emphasized during the war, and under the direction of Prof. W. W. Chenoweth of this institution farmers came to see whereby this saving could to advantage be made permanent. In order to give adequate instruction in the preservation of fruit and vegetable products, a new laboratory building is essential. The plans provide for a one-story building of inexpensive construction, which will furnish laboratories for the various phases of this work.

The pressing need for this building is now generally understood. However, some of the principal considerations may be recapitulated as follows:

1. The department of horticultural manufactures now has its work widely distributed in four buildings, viz. Flint Laboratory, Wilder Hall, French Hall, and a

workshop on the hill near the cold storage plant. This wide scattering of the work is obviously very detrimental to it.

2. The principal teaching is done at Flint Laboratory in rooms which were designed for the use of the dairy department. The dairy department needs these rooms and would like to see the department of horticultural manufactures cared for elsewhere as soon as possible.

3. The present quarters are entirely inadequate for the teaching work. On account of the limited space the department has been compelled to refuse admission to numbers of students. This is perhaps the only department in the institution which has been compelled frequently to refuse admission to students on account of lack of space. All the teaching could be much better organized and more efficiently conducted in a new building designed for this particular work.

4. It is highly desirable that vigorous research work be undertaken at the earliest opportunity in the field of fruit and vegetable preservation and the manufacture of by-products. A strong demand exists for this work among fruit growers, but the subject is equally important to all consumers of food in Massachusetts.

5. The department is now carrying on important extension work, but these extension projects need to be strongly supported by effective work at the college, and especially by well-directed research work.

6. The Massachusetts Fruit Growers' Association, the Boston Market Gardeners' Association and other organizations have urgently requested this proposed building. This specific demand from the fruit growers and vegetable growers should be squarely met.

*Tunnels from the Power Plant to Stockbridge Hall and to First Steam Pit South of the Power Plant, \$39,250.* — The principal argument advanced in support of this project is the recommendation made by French and Hubbard, Engineers, who recently made a study of the present heating plan and future development for the same, "that a tunnel be constructed to Flint Laboratory and Stockbridge Hall and the piping arranged so that exhaust steam can be used in these buildings. We are firm believers in tunnels for steam mains of this kind, and believe that when it is necessary to rearrange the underground piping, that tunnels be constructed. We would recommend this both for economy in the long run and on account of convenience in repairs and pipe insulation."

At present none of the underground steam lines are enclosed in tunnels. The result is a high cost of maintenance because of the excessive radiation and because of the difficulty in locating and repairing leaks. Also, at present, the maximum use is not made of exhaust steam; this latter difficulty would be met by the project here outlined.

*Development of the Market Garden Field Station at Waltham, \$25,000.* — The trustees of the will of the late Cornelia Warren have offered to the college about fifty acres of land located near the Clematis Brook railroad station in Waltham. This area is admirably suited for experimental work with vegetable crops. There are about twenty-three acres of level, uniform, well-drained, upland soil naturally much better adapted for experimental purposes than is the present area at North Lexington; and about fifteen acres of peaty, swamp deposit, typical in many respects of the area of wet land now being reclaimed in many different parts of the State, primarily as a health measure, but potentially of great importance to agriculture.

In addition, there is the old farmhouse, which may be remodeled to serve as living quarters for the Field Station foreman, and likewise as administrative headquarters for the plant. There are a number of other smaller buildings, some of which can be utilized, others of which may have to be wrecked.

The opportunity for more thoroughgoing investigational and demonstrational work in vegetable growing is so apparent that the trustees of the college have accepted this gift. The sum of \$25,000 is needed to cover the cost of the initial equipment at the new Field Station, in order that work may be started in the late fall of 1923. This appropriation is needed to erect a thief-proof wire fence around the plant, to care for the remodeling and moving of one of the smaller buildings now on the place to serve as service headquarters; to build a greenhouse range and heating plant; and to make preliminary repairs on the house and other build-



ings. In addition, small appropriations will later be needed to care for the draining of the swamp and to make other improvements.

By vote of the trustees a bill is being introduced into the legislature authorizing the college to sell the North Lexington plant. It is expected that receipts from the sale of this plant will be approximately \$20,000. In effect, therefore, the initial cost to the State of the much larger plant at Waltham, a total of fifty acres as against twelve acres, with increased opportunity for effective work, will be approximately \$5,000.

*Women's Gymnasium, \$15,000.* — With the number of women students now attending the college, a gymnasium is becoming constantly more imperative. Lack of gymnasium facilities for girls is in some respects a more pressing problem than lack of similar facilities for men students because for the latter there can be organized outdoor sports of a wide variety. An appropriation of \$15,000 would provide a frame gymnasium for women students which would meet our requirements for a number of years.

*Addition to Rural Engineering Shops, \$15,000.* — The demand for instruction in Rural Engineering has greatly increased during the past four years. The Two-Year students in particular elect this work in large numbers. In view of the fact that such a large proportion of the instruction is given in laboratories, it is essential that in the interests of economy as well as convenience larger laboratory facilities be provided. In the opinion of the head of the department, the present laboratory and shop should be double in size; the appropriation here indicated would provide for an increase of 50% in the floor space of the existing facilities. This additional space would be used for instruction in the care of motors, farm machinery and in the making of concrete, and for the display of farm machinery and other equipment.

*Roads, \$8,000.* — The college is responsible for the upkeep of approximately two miles of road running through its grounds, — a road which is used constantly by the public. Over a section of approximately two thousand feet of this road all the coal which is used at the college is hauled by truck. About half this section was rebuilt with thin macadam several years ago; it is now, however, in poor condition and accordingly no portion of the roads passing through the campus is of first class construction. Negotiations have been entered into with the State Highway Department relative to a plan of co-operation between that department, the town of Amherst, and the college, whereby different sections of the roads passing through college grounds as well as certain roads approaching the college may be used as demonstrations of various types of road construction. In order that a beginning may be made on this test and also that a portion of the road bearing the heaviest traffic may be placed in suitable condition the sum of \$8,000 is requested to be expended during the ensuing year.

*Tool Sheds and Garage for Division of Horticulture, \$6,000.* — At present there is no garage in which to keep the service truck operated by the grounds department; it is stored in a shed with other equipment under conditions which are unsafe from the standpoint of fire risk. Furthermore, there is not sufficient shed room to house other equipment such as wagons, sleds, and plows which are used in the farm operations. If the present tool house were rearranged as is contemplated, the work of the service department could be carried on more satisfactorily and economically. The plan proposed provides for the rearrangement of an existing building in order to provide a larger storage room and for the equipment of a carpenter shop, blacksmith shop, and an automobile repair shop. It would also provide more adequate facilities for the storage of tools and the installation of a suitable washroom for the workmen.

*Live Stock Replacement, \$5,000.* — It is necessary to replace a certain number of live stock each year. Unless this is done, the college herd will deteriorate and the educational effectiveness will thereby be greatly lessened. A considerable amount of live stock is sold each year, but in view of the fact that all receipts of the college are turned into the State treasury, the funds thus derived from the sale of live stock cannot be used for the purchase of new animals. As a result of this situation which has continued for four years, a substantial sum of money should be expended

immediately in this department, and \$5,000 is requested for such expenditures during the coming year.

*Calf Barn, \$5,000.* — This appropriation is requested in order to construct a wing to the south of the present hay barn and of the same dimensions as the present young stock stable, but fitted with pens for a calf barn. This addition to the barns is considered essential for the proper care of the large number of young stock which is carried.

*Improvements at the Tillson Farm, \$5,000.* — Following out the project submitted a year ago and for which the legislature of 1922 made an appropriation of \$5,000, a second appropriation of like amount is requested to further the development of Tillson Farm as a poultry plant for experimental use. This last year four unit houses, 30 x 30 feet, were built, a water supply was developed, and the old cellar on the place was repaired and roofed over to serve as an incubator cellar. The appropriation here requested is to cover the cost of the station requests for living quarters for the foreman of the experimental farm, for feed room, shop, operating room, office and storage; and for a laying house for pullets, the total cost of these being estimated at \$5,000. Since there will be at various times from 1,500 to 4,000 birds kept on the farm, the necessity of having the foreman resident at the plant will of course be apparent to all. This appropriation will not cover all of the requirements of the new plant, but will put it in condition for effective use this coming year.

*Superintendent's Cottage at Farm, \$5,000.* — The barns where the sheep and swine are housed are located a considerable distance from the main stock barns. The shepherd who has charge of the sheep and swine lives a mile distant. Frequently, during the winter months especially, the caretaker should be sufficiently near the stock to enable him to visit them late at night, early in the morning, and if necessary, frequently during the night. This close care can be insured only in case the superintendent lives near the barn.

*Fencing Fruit Plantations, \$3,000.* — Because of lack of funds, the fencing of the large fruit plantations owned by the college has been deferred. As a result, a good deal of fruit is stolen each year in spite of the fact that the orchards are protected by a watchman during the season when the fruit is ripening. The expenditure of the sum here indicated would seem to be justified on the grounds of economy.

*New Walks, \$2,500.* — For a number of years practically no money has been spent in the construction of new walks or renewing old walks. In order to meet the more imperative demands for walk construction a sum of \$2,500 is requested for this purpose for the ensuing year. With this appropriation it is proposed to construct a cinder walk 6 ft. wide from the Physics Building to the East Experiment Station, a distance of 960 ft. estimated at approximately \$700. It is also proposed to re-lay a strip of worn out tar walk and substitute a granolithic walk from the Drill Hall north to South College and North College, length approximately 800 ft., width 6 ft. and estimated to cost \$1,800.

*Grading and Draining Addition to Athletic Field, \$2,500.* — It is planned to extend the present athletic field south on existing college property a distance of 300 feet. This will make possible the installation of several tennis courts, and the extension of the present recreation field to accommodate a much larger number of students than is now possible. The entire project cannot be completed with an appropriation of \$2,500 although this amount will meet the immediate requirements.

*Land for Cranberry Station at East Wareham, \$1,000.* — An appropriation is requested of \$1,000 for the purchase of about sixteen acres of land contiguous to the Cranberry Station at East Wareham, for the purpose of providing opportunity for increase in experimental work with blueberries, for variety testing of cranberries, and other experimental work of a similar nature. A part of this sixteen acres is adjacent to a pond, and is a favorable site for the construction of a second experimental bog. Another part is well suited to the extension of the commercial blueberry work, while the remaining area is needed both for straightening the boundary of the present plant and to serve as a source of upland peat, sand, and fuel.

KENYON L. BUTTERFIELD,  
President.



## REPORTS OF OTHER ADMINISTRATIVE OFFICERS.

### Report of the Acting Dean.

On account of the absence of Dean Lewis it becomes my duty to present the Dean's report for the year. Dean Lewis was granted a six months' leave of absence beginning October 1. He has used part of this time for a much needed rest. Recently he has been studying administrative practices in other state institutions. The last half of his leave he intends to spend in travel and study abroad. He is expected to return in April, 1923.

During the first part of the period this report covers Dean Lewis was Acting President. His duties demanded practically all the time and energy he could command, but his helpful experienced counsel made my work as Acting Dean considerably easier.

The year opened auspiciously. We began by getting our students into classes without delay. In this matter the Supervisor of the Schedule, Professor Julian, rendered invaluable assistance. Text-books were on hand, section lists posted and schedules made up with dispatch.

Very soon after the opening of college a Freshman teacher's meeting was called at which time attention was directed to special cases of Freshmen and suggestions as to general procedure were pointed out. Possibly never before did a term's work start off more promptly and run more smoothly. The result was very few failures at the end of the first term.

However, during the second and third terms the number of failures showed a marked increase. One reason for this increase may be traced to the effects of the "rushing" season. This came at the beginning of the second term, immediately upon the return of the students from their Christmas vacation. Although the season was not a long one it was sufficiently intense to unbalance the regular routine and the setback suffered by many Freshmen and even by members of the other classes was never fully overcome. So harmful and unsatisfactory were the results that it was decided to change the time for and the length of the "rushing season," by confining it to the first three days of the fall term. This new plan seems to work well and is likely to become our permanent practice. Certainly satisfactory class work and "rushing" cannot be carried on at the same time.

The Freshman advisory work was continued during the first term in accordance with the practice inaugurated several years ago. In this work I was assisted very ably by Professors Parker, Rand, Moore and Julian. Acting on the principle that gradual release from authoritative supervision must prepare the student for self-supervision, the efforts of the adviser in behalf of his advisees were materially reduced during the second term and almost abandoned during the third term. Of course counsel, sympathy and friendliness towards them were never relinquished.

While a start has been made there still remains much to be done to give our new men the right point of view as to relative importance of so-called extra curriculum activities and studies, respectively. When parents back home often have the wrong viewpoint, it is not surprising that a large number of our incoming students should have the wrong attitude.

Anything that we can do by better teaching, closer contact, and wiser direction will not be amiss because it will tend to correct those tendencies and viewpoints in students which, if allowed to grow unnoticed, will sadly hamper, if not entirely annul, the effectiveness of what the college should give to every student. A contented student usually does good work — he profits by what the college has to offer. Hence our interest in a student must be broad enough to concern itself with the problems of housing, feeding, class relations, habits of study, regularity, punc-

tuality and effective sympathetic teaching. Too much care cannot be had in the selection of teachers of Freshmen.

During the year we lost the services of our head clerk, Miss Gertrude Hollis, who was connected with the Dean's Office for more than two years. She was a faithful and careful worker and her resignation meant a distinct loss. To fill the vacancy caused by the resignation of Miss Hollis we were fortunate indeed to secure Miss Grace Gallond who came to us from the Dairy Department. By her tactful and thorough manner she has already demonstrated her fitness for handling the innumerable office details in a sympathetic and satisfactory manner.

No distinctly new policies were inaugurated during the year. Routine matters in connection with scholarship, class attendance, committees, adjustment of schedules and conferences with students on numerous and varied problems more than comfortably filled every available minute which I could command.

The practice of keeping office hours at the rooms of the Department of Education, State House, Boston, every Thursday, started last year by Dean Lewis, was continued and the large number of conferences sought by those interested in the college and the opportunities which it offers fully justify the expenditure of whatever time and money may be necessary.

In addition to the work in the Dean's Office I continued to carry my regular teaching schedule in the Department of Mathematics. This direct contact with students in the class room is a real help to one who counsels and directs them in matters of scholarship and conduct.

The year's work was pleasant. To assist the students of slow mind, to encourage those who had a bad start, and to spur on the fellows inclined to loaf kept the duties sufficiently varied to make the work interesting. In my efforts I enjoyed the almost unanimous co-operation of the faculty and splendid support from the student body.

Attendance records and scholarship reports as a general rule were sent in regularly. Such support must be whole hearted if the Dean's office is to function as it should. Every effort is being made to use effectively every report asked for. Several changes in absence reporting which have a tendency to tighten up on attendance will be made this coming year.

WILLIAM L. MACHMER,  
*Acting Dean.*

### **Report of the Director of the Experiment Station.**

The year just passing has shown distinct improvement in the land equipment of the Experiment Station, but no corresponding change in its human equipment. There has been increased realization of the fact that the starting scale of station salaries, at least, has been and is too low to encourage men to either prepare for or enter station work. It has not yet been possible to increase materially the scope of station work, so as to enable it to give more service in relation to the food supply problem of the State. There has been but little change in the conduct of regulative work.

#### **LAND EQUIPMENT.**

The action of the last legislature in appropriating money for the purchase of the "William P. Brooks Experimental Farm" fills a need of long standing, and for the first time gives to the Experiment Station land facilities for the investigation of problems of tobacco and onion culture as well as of other problems of importance to the State at large. This advance is supplemented by the offer of gift from the trustees of the will of the late Miss Cornelia Warren, which places at the disposal of the Station, through the College, an area of about fifty acres of land situated in Waltham, and very well suited for experimental work on vegetable crops. Two important soil types are embraced in this new area, and the location is in many respects superior to that of the present experimental plant at North Lexington. Finally, the action of the Trustees in approving a plan whereby the College farm may be used for certain types of experimental work gives a certain degree of elasticity to the work of the Station which previously it did not have.



### A PASTURE EXPERIMENT STATION.

These additions to equipment fill most of the larger and more important land needs of the Station. There remains, however, one most important item, — a Pasture Experiment Station. Good pasture has always been a mainstay to the dairy industry. When our pastures were in their prime they contributed very largely to farm production and family income. At present, however, they are rapidly going to decay, and becoming liabilities instead of assets. One reason for the ability of the Vermont dairy farmer to enter and successfully compete in the home market of Massachusetts farmers lies in the efficiency of his pastures. Of course, it may be that the problem cannot be solved economically, but not until every attempt has been made should the State give up this source of potential food. As soon as existing land facilities are organized on a research basis, the matter of securing land for work of this kind will be pressed. The proposed farm should be located either in the highlands of Worcester County, in the heart of its dairy section; or in the hill country west of the Connecticut.

### THE HUMAN EQUIPMENT OF THE STATION.

Unfortunately, progress in human equipment has not kept pace with that in land equipment. A year ago I specified five new positions, among all of those requested, as being essential for the economical conduct of work already under way. Not one of these requests has been granted. It is unnecessary for me to reiterate statements already made in support of plans presented. From the standpoint of institutional policy, however, it may be well to admit the fact that existing work cannot be efficient unless some of our departments are more adequately manned. We should not attempt to do some of the work which we are now doing unless we have some assurance that deficiencies in personnel may be remedied in the fairly near future.

### THE SALARY SCALE.

At the present time difficulty in maintaining personnel is being caused by the low salary offered as a starting point in station service. Agricultural research as now organized differs radically from the "agricultural experimentation" of an earlier day, and requires more intensively trained men. Research work in disease prevention is replacing that of disease control. Fundamental studies in animal nutrition are supplanting comparative studies in the characteristics and properties of feeding stuffs. Systematic studies in plant and animal breeding, in the light of the new science of genetics, are taking the place of the comparative breed and variety tests of former days. Because of these changes in the character of research work, more is now required of research workers, in the way of fundamental training, than was either necessary or possible in the earlier days of the experiment stations. Preparation for the work is a long and arduous task. It must be based on four years in regular college course, followed by the equivalent of three years in a graduate school. Interpreted in terms of human values, seven years of a man's lifetime must be spent in training before a man may be properly equipped to fill anything other than an apprenticeship position in the Experiment Station. Few men will be willing, and fewer still able, to undertake this training unless they feel fairly certain of suitable rewards. Our present starting point in the salary scale is so low that there is no encouragement for a man to either prepare for or enter station service.

Quite pertinent in this respect is a statement made a year ago by the Director of the Graduate School. He said, "Men . . . must be able to solve the problems satisfactorily and not dawdle over them because of lack of training and understanding. The limitations in training and education should never be regarded as an excuse." This statement should be accepted as a fundamental truth; yet in view of the low starting point of station salaries, it is difficult to see how these positions can serve other than apprenticeship functions.

### THE FOOD SUPPLY SERVICE.

During the year attention has been given to the problem of co-ordinating the station research work with the problem of the food supply of the Commonwealth. Analysis of this problem shows the following salient subdivisions:

1. Production on the farm.
2. Conservation and prevention of waste.
3. Transportation.
4. Storage.
5. Marketing and distribution of food products.
6. Utilization of food.

The service of the Station to productive agriculture represents its major service to date. It is not complete; but we can at least say that the machinery for giving full service, or as full as may humanly be expected, is in existence. In the problem of conservation of food already produced, the Station is just beginning to serve. The fact that during the past year thousands of gallons of milk were wasted because of lack of a market for this product in its fluid form; the fact that during the early fall countless bushels of fall apples were wasted because of glut in the market; the fact of waste of even such a staple product as potatoes through disorganization of the market indicates the need of fundamental service of this kind.

Notwithstanding this, our Department of Horticultural Manufactures has not yet commenced to function in a research way. The work on food preservation represented by certain fundamental studies in the Department of Microbiology, first initiated during the War, has languished because of lack of sufficient man power. These facts are cited simply to show the need of service and our inability to render it.

In the next three subdivisions of the analysis, *i.e.*, transportation, storage, marketing and distribution, the Station is just beginning to serve. It is probably true that economical transportation, modernizing of marketing and distribution methods, and the removal of storage from the speculative field to that of real economic service are as important to the food consumers of the State as is economic production on the farm itself. The matter of equipping the Station so as to undertake this basic work is second to none in importance.

No work has been done at the Station on the problems of food utilization or human nutrition. It may be an open question as to whether the Station is the organization to undertake this important work. I hardly care to discuss this at this time, other than to state that the problem is most vital to an industrial Commonwealth such as Massachusetts, far removed from supplies of raw materials and from the centers of food production.

### REGULATIVE WORK.

During the year the law governing police control of animal feeds was amended so as to make this activity self-supporting. Operations under the poultry disease elimination law were radically changed, so as to secure better co-ordination of effort with the Extension Service of the College, and with the purpose of developing certain centers from which disease-free breeding stock or eggs for hatching might be secured. Of the fertilizer control law little need be said other than to point out the fact that the State is at present making a profit on something which should be no more than self-supporting. This was certainly not contemplated in the original law, as it was specified that any surplus over the cost of carrying on this regulative work should be expended in carrying out field experiments in the use of fertilizers. Under the present organization such margin is not available to the Station. During the year just past \$13,000 were appropriated by the State for the police control work in fertilizers. The receipts from this service were \$16,560. In my opinion



the existing law should either be amended so as to bring to the Station, to be expended as provided for in the original law, full receipts from this police control law; or rebate should be given to manufacturers for the difference between the actual cost of carrying on the work and the actual receipts.

SIDNEY B. HASKELL,  
*Director of the Experiment Station.*

### **Report of the Director of the Extension Service.**

Few changes in staff, and the steady development of projects have characterized the work of the past year, which has been the most satisfying since the war. This was true not only at the college but in the County Extension services also. Serious interruptions of work have been few. Conditions of the agricultural industry have been far from satisfying, although some groups have prospered. The rainy season injured many crops, and caused special problems to some, while it helped others. Wherever special problems in production or marketing resulted, special demands were made on the Extension Service to meet them. Few material changes have been made in projects and plans of work, and this is as it should be. Few pieces of project work can be completed in a single season. Emphasis may be shifted as one phase becomes the more important; but continuity is preserved. In the soils and crops project, for instance, much less time is given to promoting the use of certified seed potatoes when the use becomes more common, and more time is given to the care of the crop and to protecting it from disease. Demonstrations have increased in number, continuity, and teaching value. Relations with the Experiment Station work have continued most friendly, and have been developed to give greater values to extension teaching. Effective co-operation with the resident teaching staff continues. Mailing lists have been revised to eliminate duplication and avoid wastes. Many new publications have been prepared, and several older ones rewritten. Periodical publications have been prepared and mailed regularly. Over five hundred students were enrolled in correspondence courses. Very little was attempted in exhibits because of lack of funds. Extension schools followed the trend toward the short specialized school instead of the longer, diversified session. The rainy haying season reduced attendance at Farmers' Week, but the work done by the groups which gathered was more effective than ever. Camp Gilbert, for the county champions in Junior Extension work, was an unqualified success. The general camp for boys and girls who paid their own expenses was omitted for lack of funds.

The professional staff at the college numbered nineteen at the beginning of the fiscal year. Mrs. Ruth S. Reed resigned as Clothing Specialist, and Miss Marion L. Tucker was engaged to fill the position. Mr. Joseph F. Whitney, Specialist in Landscape Gardening, was granted leave of absence and left in the late summer for Europe for further study. Mr. Robert D. Hawley, who resigned in November 1921, returned in September of this year to his former position as supervisor of exhibits, extension schools, and extension courses at the college. No other changes have occurred in the specialist staff at the college. A number of changes in the secretarial and clerical staff have caused noticeable retardation of work, but with the close of the year the new staff-members are assuming their responsibilities satisfactorily.

The total professional staff in the counties has numbered approximately fifty. Two county agricultural agents and one assistant agent, two county home demonstration agents and two assistants, and one assistant county club agent have resigned during the year.

The financial support of extension work, both at the college and in the counties, has enabled continuance of work without much increase or decrease. County appropriations were in nearly all cases the same as for the preceding years. States Relations funds, assigned by the United States Department of Agriculture to

salaries in the counties and at the college remained the same. Regular Smith-Lever funds (Federal) reached their maximum under the law during the Federal fiscal year 1922-1923, and will hereafter remain constant, barring amendments to the appropriating act, or changes in the census return of rural population. Supplementary Smith-Lever funds were reduced in total, and may soon be entirely withdrawn. State appropriations enabled us to hold our staff, with no serious changes. The personal service item would have permitted more use of temporary help on extension schools and special projects, but a reduction of the appropriations for maintenance made it unwise to employ help for whose travel expense we had no adequate funds.

For a statement of the receipts and expenditures of the Extension Service at the College, may I refer you to the report submitted by the Treasurer of the College.

Detailed report on projects is not attempted here, but will be included in the report to the Governor in accordance with the requirements of the Smith-Lever Act.

The principal needs of the Extension Service for the coming year are maintenance funds to make more effective the work of the staff; specialists in crop protection, household management, rural engineering and animal disease control; ability to apply revenues to the costs of the projects in which they are earned; and a more liberal and dependable policy in the matter of out-of-state travel.

JOHN D. WILLARD,  
*Director of the Extension Service.*

### Report of the Director of the Graduate School.

A year ago the writer undertook to deal with "Fundamental Education" in graduate work. At that time he was conscious of certain forces operating in the general field of secondary and higher formal education to undermine not only fundamental education but also effective education of the formal nature. There are many of these forces which should be considered but in this instance it will be possible to study only one of several of these forces as an illustration for a group which is more or less conspicuous and pertinent at this time.

There has been developing a habit or a tendency in recent years to use certain euphonistic terms in a subjective and more or less detached manner. In the context the meaning is not decipherable, it is very vague and indefinite. There enters into them the spirit of innovation, of newness and of exploitation. The users seem to imply that the ideas have never before been conceived, while they are as old as history. To mention some of these terms will immediately provide the pabulum for energetic mental emissions. Some of the many are "personality," "service," "humanism," "Americanization," and "democracy." Most thinkers will grasp the significance from this limited enumeration.

It is not proposed to castigate such employment of these words or for a minute to assert that their implications, vague as they are, do not accomplish something of value, but as presented they serve merely as fireflies leading helter-skelter to light the wayfarer through the dense darkness of a labyrinthian life. At the same time these notions are eating away the supporting structures of a basic education upon which progress depends because of their transcendent use without objective anchorage. Agitative propaganda of a purely abstract idea does irreparable injury when it conflagrates and lacks tangible realization as developmental actualities. When serious matters are demagogized to elicit popular support without having accepted and tried mechanisms, such as are operable under existing conditions, to execute the task demanded, chaos and confusion are likely to follow and true progress turns into reaction. Safe superstructures arise only on firm and satisfactory foundations. History has repeatedly established this as a truism. It is the part of formal education to lead into the future through the established truths of the past and present or, in other words, base every step of advance upon the sure footing of the tried past or present. If science has contributed naught else, it has demonstrated this advancement to be correct.



Let us now develop our thoughts concretely by the study of the word "personality". When it is said by seemingly sane men that the "personality" of a teacher is all there is to teaching and an education and that subject-matter does not enter; when a student is led to believe that college life as lived in athletics and student activities is the all of a college career and that class studies have little significance; when public school pupils speak derisively of pupils who try to do their assigned duties and who do not spend their evenings in movies and dances, as "grinds", then there is no alternative in concluding that personality is either misunderstood or education is not a matter of individual study and effort but a monstrosity parading under false colors. These expressions, of course, must be obviously spontaneous, subjective and whimsical statements made without objective foundation and without due reflection. As such, too, they are often repeated and sent along floating upon the tide of verbal exchange without further consideration and without challenge. Many believe, few doubt and still fewer weigh the statements at all.

Personality has a very distinctive meaning and place. Its nature is dualistic. There is the mental self, the ego bound up with the consciousness that finds expression in "I am." In a sense it is an empty or evasive consciousness which man fails to determine fully and which yet exists for every human. Then there is a consciousness of things *extra-mental*, *extra-self*, or *extra-ego* or a consciousness which incorporates those things which exist beyond or apart from the *ego*. These *extra-impressions* reach the mind, perhaps the *ego*, through the sensations. They activate the mental mechanism which reveals itself in the consciousness *I am* and in turn which gives recognition to the consciousness of those things which have been received through the senses. In some manner the *ego* and the things received coalesce. The babe comes into the world with the mental self or mechanism ready for development. He starts with a mental capacity given by heredity and this mental capacity must be activated. He slowly responds to environment through his sensations. He notices the movement of his fingers, feels his toes, suffers pain, smiles when tickled and finally awakes to the fact that he is supported by a body. He becomes conscious of it. This process proceeds from a consciousness of self to companionship, to family, to those without his immediate environs, society, and later to community, state and nation. From the very beginning he has been accumulating experiences of the objective world in which he finds himself placed. These experiences create as he advances to manhood estate a more or less stable complex, subject to border variation, which represents his personality. Probably built upon an hereditary capacity is a self regulated functioning mechanism which secures its food or fuel or energy out of the materials with which the individual comes in assimilating contact and unifies these materials in accordance with his hereditary capacity, his environment and his real experiences into a *personality* — a personified synthesis.

If this is a personality, then constructive human effort is dependent largely upon the objective knowledge growing out of experiences and environment. It is made up of the objective world. If the hereditary mental transmissions were subject to the regulations of man, this aspect of the case would also enter, yet it would enter objectively and not subjectively. As it is there is an assumed simple recognition.

Whether a personality is attractive, appealing and possibly influential or inspiring to people at large, depends mainly upon the temperament of the individual. Some individuals, as thinkers, look beyond the temperament to the substance which makes for personality and are little influenced by it but there can be no doubt about the values of temperament. Based upon available present knowledge, however, it is probably safe to ascribe temperament to a purely psychological basis. The *brutish*, *snarling*, *cunning*, *snapping*, *bristling*, *creeping*, *barking*, *chirping*, *singing*, *frolicking*, *playful*, *purring* and *fawning* qualities are animal in origin. Man has them, too. While they influence personality they are not the substance of personality at all unless they become a part by objective incorporation through training.

Great personalities appear in history, biography, literature, science, art, business and in all lines of effort. They are found everywhere. The percentage in edu-

cational institutions is probably no greater than elsewhere. Young and adult minds are stimulated by them and draw from each those features which appeal and use them in producing a composite ideal of their own. But these personalities are formed largely out of objective or material matters and experiences which are utilized for constructive purposes. The wider these experiences or the greater the material experiences or education, the greater the personality provided mental capacity exists for receiving and creating unification or synthesis.

If this were not true, how would it be possible to account for self-educated men who have little if any personal instruction; for the student who gains success by application when his neighbor has the same personal contacts but fails; for the continuous mental development of men after they leave college when their real education seems to begin; for the values of mere reading which we all seem to accept? Why is that subject matter is undergoing division after division until specialization startles us? Why is it that pedagogic methods in subject-matter receive so much attention? Why is it that so many courses are established? Why is it that certain courses are considered necessary to attain a certain objective? Why is it that many men who are following specific professions or vocations regret that they did not pursue certain pertinent subjects while in college? Why are specialists employed? Do not all of these point to the very large part objective study exerts upon the experiences and environment of man, not only upon his value as a man but likewise his personality which is his larger and expanded self. Subject matter, of course, to be really significant and intrinsically worth-while must be intimately understood to be the basis for judgments and the material for reasoning out of which springs wisdom. Perception, understanding, judgments, reasoning and wisdom may be graphically represented as synthesized in personality.

Much could be gained were it within the scope of this article to take up the other terms for the benefit of assigning their present applications. To follow the concepts of service from primitive conditions to its present ephemeral agitative employment; to study the similarity of humanism as it existed in the days when it was proper to "do unto others as you would have others do unto you"; to parallel the liberty which was a branch of bigotry in the days of our Puritan fathers and the liberty which stands for Americanization, as it is measured by our "dollar" era; to understand a democracy which is idealistic as long as one's own ideas prevail and his faction is in control but when they do not prevail or control, blindness, ignorance and class prejudice dominate — let us repeat, this would perhaps furnish enlightening and profitable study. The general difficulty seems to lie in a chimerical and evanescent usage of these terms and the detachment of the ideas from bases which have been already materially established by experiences. Accretive growth upon that which has been already created has been totally forgotten in an enthusiasm to start a consuming spiritual conflagration without any real substance to feed the flames. It would be a great advantage to recall that science moves ahead cautiously by building critically and experimentally upon the concrete experiences of the past and present.

The whole matter centers in following one of two paths in penetrating the future: revolution or accretive progress. Education, on the whole, should be concerned with the latter only and its results, should furnish the stable basis of life and natural growth. Revolution, on the other hand, is an attempt to disorganize what already exists without gradual adjustment, to kill off our enemies which if carried to the extreme would reduce our population to a single individual and perhaps wipe it out completely, to reduce to primitive conditions which have been the product of centuries, and, in short, to create human anarchy. Everything that can be done to forestall unnatural or human turmoil and create civilizing stability should be the function of education, plodding and toiling at the foundations of society and not through its powwows.

CHARLES E. MARSHALL,  
*Director of the Graduate School.*



### Report of the Director of Short Courses.

The status of short course work during the past year has been very satisfactory from the standpoint of administration. Reasonable financial support has been granted by the legislature. The number of students registered in all courses is normal; the slight decrease in the entering class of the Two-Year Course for September, 1922, being due to the increase in tuition for non-resident students and to the elimination of the special unit courses for ex-service men. The percentage of non-resident students, exclusive of Federal trainees, for the entering class of 1921 was approximately fourteen; the percentage for the entering class of 1922 was nine.

Your attention is called especially to the following items in this report: —

(1) Recommendation for supervision of project work of students who have finished the Two-Year Course.

(2) Recommendation for the employment of a supervisor of oral and written English in the Two-Year Course.

(3) The need for housing of a part of the student group now enrolled in the college.

#### COURSES DISCONTINUED.

*A. Teachers' Courses.* — In 1918 the State Department of Education, at the request of some of the school superintendents in the western part of the state, offered at the Massachusetts Agricultural College during the summer professional courses in elementary subjects intended for public school teachers. The organization of these courses was in the nature of an experiment to determine whether or not there was such a demand for this type of work as to justify the State Department of Education making provision for it in some institution in Western Massachusetts. These courses were offered at the Massachusetts Agricultural College because the college was already maintaining a summer school. It was understood at the time that in the event there was a real need for this type of work the courses would be transferred to one of the normal schools in the western part of the state. The expense of the courses was borne by the State Department of Education; the college co-operated only in administration. The registration from the beginning demonstrated that there was a real demand. The total enrollment in all courses offered at the college was about 350. Approximately one-half of this number was enrolled in teachers' special subjects. In the summer of 1922 the courses were transferred to the normal school at North Adams. The college offered during the past summer its regular four weeks' summer school with an enrollment of 170 students. This number shows a slight increase over the enrollment in previous years in those courses offered by the college.

*B. Unit Courses for Ex-Service Men.* — The special unit courses for men disabled in the military and naval service of the United States offered by the college ever since the close of the war were discontinued June 30th, 1922. The Federal Government has now made such provision as to make this service of the college unnecessary.

#### REORGANIZATION OF THE TWO-YEAR COURSE.

The Two Year Course has been reorganized so that it is now possible for a student to devote the major part of his time to one of seven lines of work. These are animal husbandry, dairy, poultry, floriculture, horticulture, pomology, and vegetable gardening. The number of subjects that the student may take has been reduced to four. The student recites in each subject five times a week. The student chooses a group of subjects when he chooses a major, but once having elected that group there are practically no other electives. This plan has greatly reduced the cost of administration, and at the same time has made for greater efficiency.

ORGANIZATION OF NEW COURSES.

Professor H. C. Judkins of the Dairy Department has organized four new short courses in dairy manufactures. These are given during the winter school. Each course continues for approximately ten days. The entire time of the student is devoted to some phase of dairy manufactures. The course for nurserymen organized last year by Professor Frank A. Waugh was promptly filled. The college is co-operating in the administration of this course with the New England Nurserymen's Association, the Massachusetts Nurserymen's Association and the Connecticut Nurserymen's Association. The course is limited to students who have already had some practical experience in nursery work. Plans are now under way for the organization of a similar course for the training of gardeners.

SUPERVISION OF PROJECT WORK AND PLACEMENT TRAINING.

The six months' farm experience required of all Two Year students has proved to be one of the most valuable features of the course. The purpose of the Two Year Course is to train young men and women for agriculture; for the ownership of farms rather than for paid positions on farms. The most critical time in the life of the student is when he first attempts to apply for himself in a farm business enterprise what he has learned. At that time he needs and should have the advice of an experienced man who is personally interested in his success. I would suggest a further extension of the plan now followed in placement training by the employment of a man whose particular business it would be to advise with and continue the instruction of graduates of the course who are going into farming for themselves. We need a part of the time of this man anyway for the supervision of the men during the six months of placement training. Mr. Viets, who has proved to be a very capable energetic supervisor, is unable at the present time to supervise the work as carefully as it should be during the time that the men are in the field.

SUPERVISION OF ENGLISH.

The students in the Two Year Course should have some supervision in the use of oral and written English. I do not wish to have formal courses in English offered. This plan would not meet the needs. The students will, in my judgment, derive the greatest benefit if they are held strictly accountable in every class for written and oral work. We can accomplish this by employing a man whose particular task it will be to advise, correct, and, if necessary, discipline a student who does not make a reasonable effort to improve his written and oral English in all classes.

HOUSING.

I can but repeat at this time a statement I have made several times — that there is a real need for the housing of a part of the student body on the campus. I would suggest that if there be a dormitory it be for four-year men. I do not think our two-year men would take very kindly to dormitory life, but the dormitory would make other rooms in town available for the Two-Year students.

The following tables are included showing enrollment in the Two Year Course:

A. Total Yearly Enrollment of Each Year Based on Enrollment from June to September.

	1918.	1919.	1920.	1921.
Two Year Course	37	209	295	302
Ten Weeks' Winter School	91	63	112	83
Summer School	68	238	322	353
School for Country Clergymen	—	—	—	19
Vocational Poultry Course	5	13	19	26



*B. Age Distribution of Two Year Students Based on Total Enrollment June to September.*

AGE (YEARS).	1920.		1921.	
	Number.	Per Cent.	Number.	Per Cent.
16 . . . . .	—	—	—	—
17 . . . . .	21	7.1	16	5.3
18 . . . . .	34	11.5	26	8.6
19 . . . . .	35	11.9	44	14.6
20 . . . . .	38	12.88	41	13.6
21 . . . . .	27	9.2	25	8.3
22 . . . . .	26	8.9	18	5.9
23 . . . . .	21	7.1	18	5.9
23 . . . . .	21	7.1	18	5.9
24 . . . . .	16	5.4	15	5.0
25 and over . . . . .	77	26.1	99	32.8
Total . . . . .	295	100.00	302	100.00

JOHN PHELAN,  
*Director of Short Courses.*

## TABLES AND STATISTICS.

TABLE I. — *Resignations.*

POSITION.	Name.
Instructor in Zoölogy	Charles H. Abbott.
Stenographer, Extension Service	Mrs. Esther W. Arp.
Assistant Research Professor of Chemistry	Carlos L. Beals.
Analyst, Control Service	Ethel M. Bradley.
Department Librarian	Margery Burnett.
Collector of blood samples, Poultry Disease Elimination	Ray A. Carter.
Stenographer, Extension Service	Hazel D. Chandler.
Professor of Vegetable Gardening	Arthur L. Dacy.
Clerk, Extension Service	Margaret G. Davidson.
Resident Nurse	Marguerite N. Davis.
Clerk, Extension Service	Florence E. Day.
Stenographer, Dean's Office	Mary A. Evans.
Stenographer, President's Office	Margaret Fish.
Research Professor of Poultry Husbandry	Hubert D. Goodale.
Instructor in Home Economics	Olga Grizzle.
Stenographer, Department of Rural Home Life	Mrs. Ethel L. Hammond (Carrier).
Clerk, Dean's Office	Gertrude E. Hollis.
Assistant Librarian	Florence B. Kimball.
Chief Clerk, Extension Service	Marguerite C. Leduc.
Instructor in Physical Education	Elton J. Mansell.
Bookkeeper, Treasurer's Office	Mrs. Gertrude L. Milne.
Professor of Veterinary Science	James B. Paige. <sup>1</sup>
Assistant Professor of Beekeeping	Norman E. Phillips.
Stenographer, Library	Frances Powers.
Stenographer, Extension Service	Mildred Putney.
Assistant Extension Professor of Home Economics	Mrs. Ruth S. Reed.
Bookkeeper, Treasurer's Office	Mrs. Ruth L. Rodwaye.
Instructor in Poultry Husbandry	William E. Ryan.
Analyst, Poultry Disease Elimination	Ann Smith.
Clerk, President's Office	Harriet A. Smith.
Stenographer, Extension Service	Mrs. Ruth M. Smith.
Stenographer, Poultry Husbandry	Mrs. Laura S. Tower.
Matron, Women's Dormitory	Mrs. Marie E. White.

<sup>1</sup> Died Oct. 5, 1922.TABLE II. — *New Appointments.*A. *In the Academic Departments.*

POSITION.	Name.	Degrees.
Assistant Professor of entomology	Charles P. Alexander	B.Sc., Cornell, 1913; Ph.D., Cornell, 1918.
Instructor in home economics	Mary A. Bartley	—
Instructor in physical education	Herbert L. Collins	B.Sc., Massachusetts Agricultural College, 1922.
Assistant professor of botany	William H. Davis	A.B., Cornell, 1912; M.A., University of Wisconsin, 1916; Ph.D., University of Wisconsin, 1922.
Instructor in zoölogy	Philip E. Foss	B.Sc., Bowdoin, 1922.
Instructor in microbiology	Mary E. M. Garvey	B.Sc., Massachusetts Agricultural College, 1919.
Field professor of teacher training	Charles W. Kemp	B.Sc., New Hampshire State College, 1910.
Instructor in vegetable gardening	Grant B. Snyder	B.S.A., Ontario Agricultural College, 1922.
Instructor in poultry husbandry	Lewis W. Taylor	B.Sc., University of Wisconsin, 1922.

TABLE II. — *New Appointments* — Concluded.*B. In the Experiment Station.*

POSITION.	Name.	Degrees.
Assistant research professor of chemistry . . . . .	John G. Archibald . . . . .	B.Sc., Toronto University, 1916.
Research professor of poultry husbandry . . . . .	Frank A. Hays . . . . .	B.Sc., Oklahoma A. & M. College, 1908; A.M., University of Nebraska, 1912; Ph.D., Iowa State College, 1917.
Assistant Research professor of avian pathology . . . . .	Norman J. Pyle . . . . .	V.M.D., University of Pennsylvania, 1918.

*C. In the Control Service.*

Analyst, Poultry Disease Elimination . . . . .	Mildred H. Hollis . . . . .	- - -
Analyst, Control Service . . . . .	Frank J. Kokoski . . . . .	B.Sc., Massachusetts Agricultural College, 1922.
Collector of blood samples, Poultry Disease Elimination . . . . .	John J. Smith . . . . .	- - -

*D. In the Extension Service.*

Extension professor of agronomy . . . . .	John B. Abbott . . . . .	B.Sc., University of Vermont; M.Sc., Purdue University.
Supervisor of extension schools and exhibits . . . . .	Robert D. Hawley . . . . .	B.Sc., Massachusetts Agricultural College, 1918.
Extension assistant professor of home economics . . . . .	Marion L. Tucker . . . . .	B.Sc., Columbia University, 1914.

*E. Miscellaneous.*

Resident Nurse . . . . .	Anna M. Gabriel . . . . .	- - -
Matron, Women's Dormitory . . . . .	Mrs. Marie B. Marsh . . . . .	- - -

*F. In the Clerical Staff.*

POSITION.	Name.
Clerk, Short Courses . . . . .	May G. Arthur.
Clerk, Extension Service . . . . .	Mrs. Teresa M. Binner.
Stenographer, Department of Rural Home Life . . . . .	Nellie S. Carl.
Stenographer, Extension Service . . . . .	Hazel D. Chandler.
Clerk, President's Office . . . . .	Affie M. Cook.
Bookkeeper, Treasurer's Office . . . . .	Marion B. Damon.
Stenographer, Extension Service . . . . .	A. Iva Denny.
Stenographer, Extension Service . . . . .	Jeannette M. Elder.
Stenographer, Extension Service . . . . .	Laura Garnjobst.
Stenographer, Extension Service . . . . .	Louise Leonard.
Clerk, Extension Service . . . . .	Esther J. Lester.
Stenographer, Division of Horticulture . . . . .	Hazel A. Longden.
Clerk, Department of Veterinary Science and Animal Pathology . . . . .	Katharine M. Martin.
Junior Assistant Librarian . . . . .	Katherine L. Powell.
Bookkeeper, Treasurer's Office . . . . .	Mrs. Emma F. Sargent.
Clerk, Department of Dairying . . . . .	Charlotte M. Sheffield.
Clerk, Extension Service . . . . .	Dorothea E. Sinclair.
Stenographer, Department of Poultry Husbandry . . . . .	Alice J. Twible.
Assistant Librarian . . . . .	Bessie M. Weymouth.
Stenographer, Extension Service . . . . .	Elizabeth A. Wheeler.
Stenographer, President's Office . . . . .	Harriette C. Whitney.

TABLE III. *Speakers for the Year.*

A. *Speakers at Assembly for Year ending Nov. 30, 1922.*

<b>1921.</b>	
Dec.	1. — Mr. Clifton D. Jackson, Springfield.
Dec.	8. — Dr. C. W. Pugsley, Washington, D. C.
Dec.	15. — Student Forum.
<b>1922.</b>	
Jan.	4. — Mr. Lewis Hodous, Hartford, Conn.
Jan.	11. — Mr. James R. Marsh, Roxbury.
Jan.	18. — Student Forum.
Jan.	25. — Mr. Harry F. Ward, New York City.
Feb.	1. — Freshman-Sophomore Debate.
Feb.	8. — Mr. John L. Finley, Easthampton.
Feb.	15. — Prof. Raymond G. Gettell, Amherst.
March	1. — President Kenyon L. Butterfield.
March	8. — Hon. James J. Jackson, Boston.
March	15. — Student Forum.
April	5. — Prof. Curry S. Hicks, M. A. C.
April	12. — Mr. Joe Mitchell Chapple, Boston.
April	26. — Hon. J. Weston Allen, Newton.
May	3. — Prof. Paul Monroe, New York City.
May	17. — Student Mass Meeting.
May	31. — General Clarence R. Edwards, Boston.
June	14. — President Kenyon L. Butterfield.
Oct.	5. — Prof. Frank A. Waugh, M. A. C.
Oct.	19. — Mr. Roland D. Sawyer, Ware.
Oct.	26. — Senator George D. Chamberlain, Springfield.
Nov.	2. — Dr. Joel E. Goldthwait, Boston.
Nov.	9. — Prof. C. E. A. Winslow, New Haven, Conn.
Nov.	16. — Student Forum.
Nov.	23. — Dr. Homer J. Wheeler, Newton.

B. *Speakers at Sunday Chapel for Year ending Nov. 30, 1922.*

<b>1921.</b>	
Nov.	20. — Bishop Thomas F. Davies, Springfield.
Dec.	4. — Rev. John Haynes Holmes, New York City.
Dec.	11. — Rev. Henry K. Sherrill, Brookline.
Dec.	18. — Rev. William I. Chamberlain, New York City.
<b>1922.</b>	
Jan.	8. — Bishop Edwin H. Hughes, Malden.
Jan.	15. — Dean Charles R. Brown, New Haven, Conn.
Jan.	22. — Mr. Owen R. Lovejoy, New York City.
Jan.	29. — P. Whitwell Wilson, M. P., New York City and London.
Feb.	5. — Rev. Newton M. Hall, Springfield.
Feb.	12. — Rev. Neil McPherson, Springfield.
Feb.	19. — Mr. Alfred E. Stearns, Andover.
Feb.	26. — Rev. Daniel A. Evans, Cambridge.
March	5. — Rev. Henry S. MacCready, Willimantic, Conn.
March	12. — Dr. Albert Parker Fitch, Amherst.
March	19. — Rev. Fred W. Adams, Springfield.
April	9. — Dr. Howard A. Bridgman, Groton.
April	16. — Mr. Albert E. Roberts, New York City.
April	23. — Rev. William S. Beard, New York City.
April	30. — Rev. James G. Gilkey, Springfield.
Oct.	1. — Dean Edward M. Lewis, M. A. C.
Nov.	5. — Dr. Hugh Black, New York City.
Nov.	12. — Dr. Herbert J. White, Hartford, Conn.
Nov.	19. — Dr. Albert Parker Fitch, Amherst.
Nov.	26. — Dean Thomas Arkle Clark, Urbana, Ill.

TABLE IV. — *Attendance.*

A. *In work of College Grade.*

	REGISTRATION NOV. 30, 1921.			REGISTRATION NOV. 1, 1922.		
	Men.	Women.	Total.	Men.	Women.	Total.
Graduate students	53	8	61	48	6	54
Senior class	91	5	96	84	7	91
Junior class	93	8	101	89	6	95
Sophomore class	104	9	113	91	6	97
Freshman class	147	15	162	167	20	187
Special students	10	3	13	9	4	13
Totals	498	48	546	488	49	537



TABLE IV. — *Attendance* — Concluded.*B. Short Course Enrollment.*

	REGISTRATION NOV. 30, 1921.			REGISTRATION NOV. 1, 1922.		
	Men.	Women.	Total.	Men.	Women.	Total.
Two-Year Course, second year . . . . .	129	9	138	116	5	121
Two-Year Course, first year . . . . .	150	5	155	128	8	136
Vocational Poultry Course . . . . .	26	—	26	8	1	9
Unit Course . . . . .	29	—	29	—	—	—
Totals . . . . .	334	14	348	252	14	266

*C. Other Short Course Enrollment.*

School for Country Clergymen . . . . .	18	1	19	31	2	33
Winter School . . . . .	69	14	83	77	20	97
Summer School . . . . .	67	192	259	23	147	170
Summer School for Federal men . . . . .	65	—	65	—	—	—
School of Rural Home Life . . . . .	—	—	—	—	16	16
Totals . . . . .	219	207	426	131	185	316

*D. Convention Registration.*

	1921.	1922.
State institutional superintendents and farmers . . . . .	50	—
Polish farmers' day . . . . .	100	125
Farmers' week and annual poultry convention . . . . .	3,000	2,000
Junior boys' and girls' prize winners' camp . . . . .	95	100
Girls' camp (paid) . . . . .	14	—
Boys' camp (paid) . . . . .	34	—
One-day campers (boys and girls) . . . . .	198	70
Extension workers' conference . . . . .	80	80
Sheep breeders' conference . . . . .	212	100
Clothing efficiency conference (2) for paid leaders . . . . .	14	—
Clothing efficiency conference for local leaders . . . . .	53	—
Tri-State Conference on Marketing . . . . .	—	150
	3,850	2,625

TABLE V. — *Legislative Budget, 1922.*

ITEMS.	Amount asked.	Amount granted.
Chemistry laboratory and equipment . . . . .	\$350,000 00	\$150,000 00 <sup>1</sup>
Improvements at power plant . . . . .	80,000 00	63,000 00
Laboratory for horticultural manufactures . . . . .	50,000 00	—
Improvements at Tillson Farm . . . . .	5,000 00	5,000 00
Macadam road . . . . .	8,000 00	—
Purchase of Brooks Farm . . . . .	20,000 00	15,000 00
	\$513,000 00	\$233,000 00

<sup>1</sup> An additional appropriation of \$150,000 to be made in 1923.

TABLE VI. — *Current Account, State Funds.*

	Requested 1922.	Appro- priated 1922.	Deficiency Appro- priation. <sup>1</sup>	Expended 1922.	Balance.
Personal services; —					
Administration . . . . .	\$43,360	\$42,020	—	\$41,180 88	\$339 12
Instruction . . . . .	203,175	187,875	—	184,440 92	3,434 08
General maintenance . . . . .	120,000	118,000	\$367 43	115,364 35	3,003 08
Experiment Station . . . . .	66,075	60,000	36 00	59,014 57	1,021 43
Extension Service . . . . .	59,780	52,290	2 70	50,693 81	1,598 89
Market Garden Field Station . . . . .	6,500	6,000	—	5,453 54	546 46
Short Courses . . . . .	53,640	48,000	—	47,418 28	581 72
Travel, office and other expenses . . . . .	46,000	45,000	622 11	42,544 50	3,077 61
Teaching, laboratory supplies and equipment . . . . .	56,000	55,000	361 05	55,800 59	—439 54
Experiment Station: —					
Supplies, equipment and publi- cations . . . . .	20,050	14,000	263 56	13,619 19	644 37
Travel and office expenses . . . . .	4,785	3,300	5 16	4,081 81	—776 65
Extension Service, supplies, equip- ment, travel, etc. . . . .	44,000	35,000	910 62	37,702 69	—1,792 07
Short courses . . . . .	19,235	12,000	78 94	11,793 16	285 78
Heat, light and power . . . . .	68,000	59,000	3,375 00	64,049 62	—1,674 62
Farm . . . . .	24,000	22,000	408 45	18,447 76	3,960 69
Repairs, ordinary . . . . .	25,000	25,000	81 69	30,847 83	—5,766 14
Replacements . . . . .	75,000	25,000	—	25,533 92	—533 92
Market Garden Field Station . . . . .	3,825	3,000	230 36	3,624 85	—394 49
Fertilizer law control . . . . .	14,500	13,000	—	12,961 80	38 20
Poultry disease law . . . . .	6,500	6,000	17 91	6,135 61	—117 70
Milk-testing inspection law . . . . .	700	600	9 60	631 30	—21 70
Commercial feedstuffs . . . . .	8,000	7,000	4 79	7,011 19	—6 40
Trustees' expenses . . . . .	1,200	1,200	—	874 07	325 93
Printing reports . . . . .	5,000	2,000	—	1,965 82	34 18
	\$974,325	\$842,285	\$6,775 37	\$841,192 06	\$7,868 31

<sup>1</sup> Balance from deficiency appropriation \$680,000.

TABLE VII. — *Statistics of Freshmen entering Massachusetts Agricultural College  
September 1922.*

A. *Home Addresses of Students (classified by Towns and Cities.)*

Abington . . . . .	1	Hopedale . . . . .	1	Reading . . . . .	3
Adams . . . . .	1	Hopkinton . . . . .	1	Richmond . . . . .	1
Amherst . . . . .	8	Hubbardston . . . . .	1	Salisbury . . . . .	1
Andover . . . . .	1	Ipswich . . . . .	1	Shelburne . . . . .	4
Arlington . . . . .	2	JACKSONVILLE, Fla. . . . .	1	Shrewsbury . . . . .	1
Ashburnham . . . . .	2	Kars, Armenia . . . . .	1	South Hadley . . . . .	2
Athol . . . . .	2	LAWRENCE . . . . .	2	Spencer . . . . .	1
Barnstable . . . . .	2	Longmeadow . . . . .	1	SPRINGFIELD . . . . .	10
Barnardston . . . . .	1	Ludlow . . . . .	1	Stoneham . . . . .	3
BEVERLY . . . . .	2	Manchester . . . . .	2	Stoughton . . . . .	1
Billerica . . . . .	1	MANCHESTER, N. H. . . . .	1	Stow . . . . .	2
Bolton . . . . .	2	MELROSE . . . . .	3	Sunderland . . . . .	1
BOSTON . . . . .	10	Methuen . . . . .	1	TAUNTON . . . . .	2
Bridgewater . . . . .	1	Middleborough . . . . .	1	Templeton . . . . .	1
Brimfield . . . . .	5	Milford . . . . .	1	Tisbury . . . . .	1
BROCKTON . . . . .	3	Millis . . . . .	1	Topsfield . . . . .	1
Brookline . . . . .	1	Millville . . . . .	1	Townsend . . . . .	1
CAMBRIDGE . . . . .	2	Montpelier, Ohio . . . . .	1	Vastarvik, Sweden . . . . .	1
CHELSEA . . . . .	1	Natick . . . . .	3	Wallingford, Conn. . . . .	1
Colrain . . . . .	2	Needham . . . . .	1	WALTHAM . . . . .	1
Conway . . . . .	1	NEW BEDFORD . . . . .	1	Ware . . . . .	3
Dalton . . . . .	2	NEW ROCHELLE, N. Y. . . . .	1	Warren . . . . .	1
Deerfield . . . . .	2	NEWTON . . . . .	5	Westborough . . . . .	1
East Bridgewater . . . . .	1	NEW YORK, N. Y. . . . .	2	West Bridgewater . . . . .	1
Easthampton . . . . .	2	NORTHAMPTON . . . . .	1	WESTFIELD . . . . .	3
EVERETT . . . . .	2	North Brookfield . . . . .	1	WEST HARTFORD, Conn. . . . .	1
Fairhaven . . . . .	1	Northfield . . . . .	2	Westport, Conn. . . . .	1
FALL RIVER . . . . .	1	Norwood . . . . .	1	West Newbury . . . . .	1
Glastonbury, Conn. . . . .	1	Orange . . . . .	1	West Springfield . . . . .	1
Grafton, Vt. . . . .	2	Oxford . . . . .	1	Williamsburg . . . . .	1
Greenfield . . . . .	2	Pelham . . . . .	1	Winchester . . . . .	2
HABANA, Cuba . . . . .	1	PORTLAND, Me. . . . .	1	WORCESTER . . . . .	5
HOLYOKE . . . . .	13	PROVIDENCE, R. I. . . . .	2		

TABLE VII.—*Statistics of Freshman entering Massachusetts Agricultural College, September 1922 — Continued.**B. Home Addresses (classified by States and Countries).*

	Number.	Per Cent.		Number.	Per Cent.
Armenia . . . . .	1	.53	New York . . . . .	3	1.60
Connecticut . . . . .	4	2.13	Ohio . . . . .	1	.53
Cuba . . . . .	1	.53	Rhode Island . . . . .	2	1.06
Florida . . . . .	1	.53	Sweden . . . . .	1	.53
Maine . . . . .	1	.53	Vermont . . . . .	2	1.06
Massachusetts . . . . .	169	90.37			
New Hampshire . . . . .	1	.53		187	100.00

*C. Home Addresses (classified by Counties of Massachusetts).*

	Number.	Per Cent.		Number.	Per Cent.
Barnstable . . . . .	2	1.18	Middlesex . . . . .	31	18.34
Berkshire . . . . .	4	2.36	Norfolk . . . . .	5	2.96
Bristol . . . . .	5	2.96	Plymouth . . . . .	8	4.73
Dukes . . . . .	1	.59	Suffolk . . . . .	11	6.50
Essex . . . . .	12	7.10	Worcester . . . . .	22	13.01
Franklin . . . . .	16	9.52			
Hampden . . . . .	34	20.11		169	100.00
Hampshire . . . . .	18	10.65			

*D. Navidity of Parents.*

	Number.	Per Cent.
Neither parent foreign born . . . . .	134	71.65
Both parents foreign born . . . . .	33	17.64
Father (only) foreign born . . . . .	11	5.88
Mother (only) foreign born . . . . .	6	3.20
No statistics . . . . .	3	1.60
	187	100.00

*E. Education of Father.*

	Number.	Per Cent.
Common school . . . . .	77	41.17
High school . . . . .	51	27.27
Business school . . . . .	15	8.02
College or university . . . . .	32	17.11
No statistics . . . . .	12	6.41
	187	100.00

TABLE VII. — *Statistics of Freshman entering Massachusetts Agricultural College, September 1922 — Concluded.**F. Religious Census.*

	MEMBERSHIP.		PREFERENCE.		TOTALS.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Baptist . . . . .	22	11.76	2	1.06	24	12.97
Catholic . . . . .	28	14.97	—	—	28	14.97
Congregationalist . . . . .	52	27.80	18	9.62	70	37.43
Episcopal . . . . .	9	4.81	1	.53	10	5.34
Methodist . . . . .	16	8.55	—	—	16	8.55
Presbyterian . . . . .	4	2.13	2	1.06	6	3.20
Unitarian . . . . .	9	4.81	5	2.67	14	7.41
Universalist . . . . .	1	.53	—	—	1	.53
Miscellaneous . . . . .	12	6.41	5	2.67	17	9.09
No statistics . . . . .	1	.53	—	—	1	.53
	154	82.30	33	17.61	187	100.00

*G. Occupation of Father.*

	Number.	Per Cent.
Agriculture and horticulture . . . . .	41	21.92
Artisans . . . . .	37	19.79
Business . . . . .	43	22.99
Deceased or no statistics . . . . .	21	11.23
Miscellaneous . . . . .	24	12.83
Professional . . . . .	21	11.23
	187	100.00

*H. Intended Vocation of Student.*

	Number.	Per Cent.
Agriculture or horticulture (practical) . . . . .	75	40.11
Agriculture or horticulture (professional) . . . . .	42	22.46
Professions . . . . .	17	9.09
Miscellaneous . . . . .	26	13.90
Undecided or no statistics . . . . .	27	14.44
	187	100.00

*I. Farm Experience.*

	Number.	Per Cent.
Brought up on a farm . . . . .	55	29.41
Not brought up on a farm and having no or practically no farm experience . . . . .	45	24.06
Not brought up on a farm, but having had some farm experience . . . . .	86	46.00
No statistics . . . . .	1	.52
	187	100.00

*J. Miscellaneous Statistics.*

Average age . . . . . 19.19 years.



## REPORT OF THE TREASURER.

FOR THE FISCAL YEAR ENDING NOV. 30, 1922.

## BALANCE SHEET.

	DR.	CR.
<b>1921</b>		
Dec. 1. To balance on hand . . . . .	\$30,227 89	
<b>1922</b>		
Nov. 30. To departmental income . . . . .	136,039 79	
Nov. 30. To receipts from State Treasurer . . . . .	874,475 48	
Nov. 30. To refunds to State Treasurer . . . . .	216 45	
Nov. 30. To receipts from United States Treasurer . . . . .	119,802 58	
Nov. 30. To November schedule in transit . . . . .	109,305 12	
Nov. 30. Refunds transferred to State Treasurer . . . . .		\$216 45
Nov. 30. Expenditures for fiscal year . . . . .		1,096,431 67
Nov. 30. Income transferred to State Treasurer . . . . .		136,039 79
Nov. 30. Balance on hand . . . . .		37,379 40
	\$1,270,067 31	\$1,270,067 31

STATEMENT OF LEGISLATIVE APPORTIONMENT AND EXPENDITURES FOR FISCAL YEAR  
ENDING NOVEMBER 30, 1922, AND APPORTIONMENT REQUESTED FOR 1923.

	Apportionment for Last Fiscal Year.		Expenditures.	Requested Apportionment for New Fiscal Year.	
College:					
Personal services . . . . .	\$348,262 43		\$340,986 15	\$359,030 00	
Maintenance . . . . .	210,848 30		211,690 30	220,695 00	
		\$559,110 73		\$552,676 45	\$579,725 00
Experiment Station:					
Personal services . . . . .	\$60,036 00		\$59,014 57	\$72,420 00	
Maintenance . . . . .	17,568 72		17,701 00	20,000 00	
		77,604 72		76,715 57	92,420 00
Extension Service:					
Personal services . . . . .	\$52,292 70		\$50,693 81	\$52,180 00	
Maintenance . . . . .	35,910 62		37,762 69	40,000 00	
		88,203 32		88,396 50	92,180 00
Short Courses:					
Personal services . . . . .	\$48,000 00		\$47,418 28	\$53,230 00	
Maintenance . . . . .	12,078 94		11,793 16	12,000 00	
		60,078 94		59,211 44	65,230 00
Market Garden Field Station:					
Personal services . . . . .	\$6,000 00		\$5,453 54	\$6,000 00	
Maintenance . . . . .	3,230 36		3,624 85	4,000 00	
		9,230 36		9,078 39	10,000 00
Trustees travel . . . . .	\$1,200 00		\$874 07	\$1,200 00	
Printing reports . . . . .	2,000 00		1,965 82	2,000 00	
Commercial feedstuffs . . . . .	7,004 79		7,011 19	9,000 00	
Totals . . . . .		10,204 79		9,851 08	12,200 00
Fertilizer law . . . . .	\$13,000 00		\$12,961 80	\$14,500 00	
Poultry law . . . . .	6,017 91		6,135 61	7,000 00	
Milk testing law . . . . .	609 60		631 30	600 00	
Totals . . . . .		19,627 51		19,728 71	22,100 00
Replacements . . . . .	\$25,000 00	25,000 00	\$25,533 92	25,533 92	\$40,000 00
Totals . . . . .		\$849,060 37		\$841,192 06	\$913,855 00
Balance unexpended . . . . .				7,868 31	
				\$849,060 37	

## CASH STATEMENT.

	Other Funds.	State Funds.	Totals.
Balance Dec. 1, 1921 . . . . .	\$30,227 89	-	\$30,227 89
<i>Receipts.</i>			
College receipts from students and others . . . . .	-	-	21,864 17
Tuition . . . . .	-	\$3,998 01	
Laboratory fees . . . . .	-	5,863 81	
Rents . . . . .	-	12,002 35	
Departmental sales . . . . .	-	-	73,859 16
Produce . . . . .	-	63,971 48	
Miscellaneous . . . . .	-	9,887 68	
Experiment Station . . . . .	-	-	8,723 76
Cranberry receipts . . . . .	-	6,138 21	
Chemical receipts . . . . .	-	466 74	
Miscellaneous . . . . .	-	2,118 81	
Extension Service . . . . .	-	-	1,086 90
Correspondence Courses . . . . .	-	860 12	
Miscellaneous . . . . .	-	226 78	
Short Courses . . . . .	-	-	6,893 91
Students' fees . . . . .	-	6,385 08	
Winter school . . . . .	-	450 00	
Miscellaneous . . . . .	-	58 83	
Market Garden Field Station . . . . .	-	-	3,594 41
Produce . . . . .	-	3,594 41	
Feed Law . . . . .	-	267 00	267 00
Fertilizer Law . . . . .	-	16,571 08	16,571 08
Milk testing law . . . . .	-	675 05	675 05
Poultry disease law . . . . .	-	2,504 35	2,504 35
Treasurer of the Commonwealth . . . . .	-	-	874,475 48
Maintenance . . . . .	-	746,847 17	
Special appropriations . . . . .	-	122,852 49	
Endowment . . . . .	3,313 32	-	
Department of Education . . . . .	1,462 50	-	
Federal Government . . . . .	-	-	119,802 58
Land Grant of 1862 . . . . .	7,300 00	-	
Hatch fund of 1887 . . . . .	15,000 00	-	
Morrill fund of 1890 . . . . .	16,666 67	-	
Adams fund of 1906 . . . . .	15,000 00	-	
Nelson fund of 1907 . . . . .	16,666 66	-	
Smith Lever fund of 1914 . . . . .	30,644 89	-	
Short Course, two years . . . . .	18,524 36	-	
November schedules in transit . . . . .	-	109,305 12	109,305 12
	\$154,806 29	\$1,115,044 57	\$1,269,850 86
<i>Payments.</i>			
College expenses . . . . .	-	-	\$598,085 60
Personal services . . . . .	\$45,409 15	\$340,986 15	
Maintenance . . . . .	-	211,690 30	
Experiment Station . . . . .	-	-	105,834 07
Personal services . . . . .	28,698 50	59,014 57	
Maintenance . . . . .	420 00	17,701 00	
Extension Service . . . . .	-	-	115,744 32
Personal services . . . . .	26,306 30	50,693 81	
Maintenance . . . . .	1,041 52	37,702 69	
Short Courses . . . . .	-	-	74,762 86
Personal services . . . . .	13,046 85	47,418 28	
Maintenance . . . . .	2,504 57	11,793 16	
Market Garden Field Station . . . . .	-	-	9,078 39
Personal services . . . . .	-	5,453 54	
Maintenance . . . . .	-	3,624 85	
Trustees travels . . . . .	-	874 07	874 07
Printing reports . . . . .	-	1,965 82	1,965 82
Replacements . . . . .	-	25,533 92	25,533 92
Commercial feed-stuffs . . . . .	-	7,011 19	7,011 19
Fertilizer law . . . . .	-	12,961 80	12,961 80
Milk testing law . . . . .	-	631 30	631 30
Poultry disease law . . . . .	-	6,135 61	6,135 61
Special appropriations . . . . .	-	-	137,812 72
1921 Market Garden Field Station Administration Building . . . . .	-	2,668 99	
1922 Purchase of Brooks Farm . . . . .	-	15,000 00	
1922 Chemistry Building . . . . .	-	56,720 37	
1922 Improvements to Power Plant . . . . .	-	58,604 71	
1922 Improvements to Tillson Farm . . . . .	-	4,818 65	
Income . . . . .	-	136,039 79	136,039 79
Balance . . . . .	37,379 40	-	37,379 40
	\$154,806 29	\$1,115,044 57	\$1,269,850 86

## CURRENT ACCOUNTS, 1922.

*Disbursements and Receipts.*

ACCOUNTS.	Disbursements from Nov. 30, 1921, to Nov. 30, 1922.	Receipts from Nov. 30, 1921, to Nov. 30, 1922.	Apportionment for Year ending Nov. 30, 1922.	Balance to Credit.
Administration:				
Dean's office . . . . .	\$569 26	—	\$703 00	\$133 74
Executive order . . . . .	8,241 69	—	12,920 57	4,678 88
President's office . . . . .	1,843 06	\$0 25	2,200 69	357 63
Registrar's office . . . . .	771 70	15 00	807 40	35 70
Salaries . . . . .	41,180 88	—	42,020 00	839 12
Treasurer's office . . . . .	1,615 41	97 94	1,812 76	197 35
Maintenance, academic:				
Agricultural economics . . . . .	564 60	—	568 75	4 15
Agricultural education . . . . .	224 38	—	400 65	176 27
Agronomy . . . . .	1,248 92	342 50	1,203 26	—45 66
Animal husbandry . . . . .	648 51	140 00	600 95	—47 56
Beekeeping . . . . .	353 69	34 32	521 60	167 91
Botany . . . . .	1,497 32	598 50	1,533 50	36 18
Chemistry . . . . .	8,205 18	2,267 63	5,255 23	—2,949 95
Dairying . . . . .	30,463 16	23,248 66	33,027 30	2,564 14
Domestic Science . . . . .	1,281 74	79 70	1,410 66	128 92
Economics and sociology . . . . .	223 07	—	223 28	21
Entomology . . . . .	1,097 39	114 50	1,250 00	152 61
Farm management . . . . .	374 90	34 50	511 92	137 02
Floriculture . . . . .	7,463 73	2,991 69	7,502 55	38 82
Forestry . . . . .	273 50	6 00	350 20	76 70
General agriculture . . . . .	2,451 39	—	2,500 00	48 61
Horticultural manufactures . . . . .	3,015 35	602 75	3,582 05	566 70
Hospital . . . . .	3,833 91	777 25	3,340 56	—493 35
Landscape gardening . . . . .	587 25	401 50	529 34	—57 91
Language and literature . . . . .	243 71	153 00	300 00	—56 29
Mathematics . . . . .	405 03	61 70	490 00	84 97
Microbiology . . . . .	2,285 89	441 68	2,154 21	—131 68
Military science . . . . .	1,459 21	30 00	1,420 60	—38 61
Mount Toby . . . . .	3,358 91	2,273 06	3,508 85	149 94
Physical education . . . . .	1,028 23	—	1,006 71	—21 52
Physics . . . . .	788 62	69 00	718 85	—69 77
Pomology . . . . .	5,161 43	2,979 10	5,321 59	160 16
Poultry husbandry . . . . .	14,304 92	14,559 37	14,506 73	201 81
Rural engineering . . . . .	902 28	182 35	900 00	—2 28
Rural sociology . . . . .	160 71	—	200 00	39 29
Vegetable gardening . . . . .	6,114 50	2,558 15	6,501 70	387 20
Veterinary science . . . . .	2,139 23	108 00	2,007 00	—132 23
Women's dormitory . . . . .	3,117 36	6,509 46	2,702 64	—414 72
Zoology and geology . . . . .	554 12	418 00	650 00	95 88
Maintenance, general:				
Farm . . . . .	38,363 24	15,597 67	37,559 05	—804 19
General horticulture . . . . .	8,865 58	330 58	8,529 46	—336 12
Graduate school . . . . .	54 94	—	100 00	45 06
Grounds . . . . .	8,693 62	10 10	8,900 00	206 38
Library . . . . .	8,713 44	67 12	8,281 24	—432 20
General expense . . . . .	3,114 49	3,161 21	—	—
Operating and maintenance . . . . .	140,448 88	14,461 09	140,544 64	95 76
Replacements . . . . .	25,533 92	—	25,000 00	—533 92
Endowment fund . . . . .	10,613 32	10,613 32	10,613 32	3,650 00
Instruction:				
Salaries . . . . .	184,440 92	—	187,875 00	3,434 08
United States Treasurer, Morrill Fund . . . . .	16,666 67	16,666 67	16,666 67	9,722 22
United States Treasurer, Nelson Fund . . . . .	16,666 66	16,666 66	16,666 66	9,722 21
State Treasurer, account of schedules . . . . .	—	578,210 37	—	—
Income to State Treasurer . . . . .	95,723 33	—	—	—
	\$717,953 15	\$717,880 35	\$627,901 14	\$31,880 24
Less refunds . . . . .	72 80	—	—	—
	\$717,880 35	\$717,880 35	—	—
Balance beginning fiscal year Dec. 1, 1921 . . . . .	—	23,094 43	—	—
Balance on hand Nov. 30, 1922 . . . . .	23,094 43	—	—	—
	\$740,974 78	\$740,974 78	—	—

## COLLEGE ACCOUNTS.

*Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1921 . . . . .	-	\$23,094 43
Institution receipts Nov. 30, 1922 . . . . .	-	95,723 33
State Treasurer's receipts Nov. 30, 1922 . . . . .	-	578,210 37
United States Treasurer's receipts Nov. 30, 1922 . . . . .	-	33,333 33
State Treasurer, Department of Education . . . . .	-	1,462 50
Endowment Fund . . . . .	-	10,613 32
Total Disbursements . . . . .	\$598,085 60	-
Receipts turned in to State Treasurer . . . . .	95,723 33	-
	\$693,808 93	\$742,437 28
Bills receivable Dec. 1, 1921 deducted . . . . .	-	8,552 48
Bills payable Dec. 1, 1921 deducted . . . . .	3,801 17	-
	\$690,007 76	\$733,884 80
Bills receivable Nov. 30, 1922 . . . . .	-	14,219 25
Bills payable Nov. 30, 1922 . . . . .	1,063 12	-
Balance . . . . .	57,033 17	-
	\$748,104 05	\$748,104 05



FARM DISBURSEMENTS.

	Repairs.	Labor.	Equip- ment.	Feed.	Supplies.	Sundry.	Bedding.	Fertilizer.	Seeds.	Improve- ments.	Totals.
Dairy cattle . . . . .	-	\$4,100 07	\$129 24	\$412 97	\$1,108 51	\$954 59	-	-	-	-	\$6,705 38
Horses . . . . .	-	1,337 93	54 05	-	16 17	217 28	-	-	-	-	1,625 43
Sheep . . . . .	-	1,088 39	29 09	-	17 88	59 77	-	-	-	-	1,195 13
Live stock . . . . .	-	434 12	-	6,799 35	-	-	\$3,253 35	-	-	-	10,486 82
Swine . . . . .	-	1,061 17	9 36	674 16	-	-	-	-	-	-	1,833 73
Teams . . . . .	-	379 61	191 43	-	7 37	81 67	-	-	-	-	1,760 41
Field crops . . . . .	-	4,364 30	-	-	1 50	189 37	-	\$975 93	\$444 70	-	5,813 59
Tools and machinery . . . . .	\$752 29	666 28	320 08	-	787 58	27 16	-	-	-	-	2,326 23
Miscellaneous . . . . .	-	6,483 61	-	-	89 04	136 57	-	-	-	\$707 30	7,416 52
Totals . . . . .	\$752 29	\$19,915 48	\$733 25	\$7,886 48	\$2,028 05	\$1,666 41	\$3,253 35	\$975 93	\$444 70	\$707 30	\$38,363 24

FARM CREDITS.

	Wool.	Milk.	Stock.	Sundry.	Labor.	Field Crops.	Tools and Machinery.	Totals.
Dairy cattle . . . . .	-	\$7,614 30	\$4,452 36	-	-	-	-	\$12,066 66
Horses . . . . .	-	-	40 00	-	-	-	-	946 77
Sheep . . . . .	\$154 46	-	632 31	\$160 00	-	-	-	117 18
Live stock, supplies . . . . .	-	-	-	117 18	-	\$586 71	-	586 71
Field crops . . . . .	-	-	-	-	-	-	-	828 10
Swine . . . . .	-	-	828 10	-	-	-	-	47 44
Teams . . . . .	-	-	-	-	\$47 44	-	-	17 00
Tools and machinery . . . . .	-	-	-	851 64	96 17	-	\$17 00	947 81
Miscellaneous . . . . .	-	-	-	-	-	-	-	-
Totals . . . . .	\$154 46	\$7,614 30	\$5,952 77	\$1,128 82	\$143 61	\$586 71	\$17 00	\$15,597 67

AGRICULTURAL DIVISION.  
*Disbursements and Receipts.*

	Disbursements.	Receipts.
Agronomy . . . . .	\$1,248 92	\$342 50
Animal husbandry . . . . .	648 51	140 00
Dairying . . . . .	30,463 16	23,248 66
Farm . . . . .	38,363 24	15,597 67
Farm management . . . . .	374 90	34 50
Poultry husbandry . . . . .	14,304 92	14,559 37
Rural engineering . . . . .	902 28	182 35
Division totals . . . . .	\$86,305 93	\$54,105 05

*Summary.*

	DR.	CR.
By total division receipts . . . . .		\$54,105 05
By bills receivable . . . . .		13,065 67
By net apportionment . . . . .		34,204 16
To total division disbursements . . . . .	\$86,305 93	
To bills payable . . . . .	307 28	
Balance . . . . .	14,761 67	
	\$101,374 88	\$101,374 88

*Inventory of Quick Assets.*

	Nov. 30, 1921.	Nov. 30, 1922.
Inventory of produce . . . . .	\$10,487 81	\$13,038 91
Inventory of cattle . . . . .	18,975 00	19,510 00
Inventory of swine . . . . .	701 00	1,487 00
Inventory of horses . . . . .	3,850 00	3,800 00
Inventory of poultry . . . . .	3,390 00	4,243 75
Inventory of sheep . . . . .	1,842 00	1,805 00
	\$39,245 81	\$43,884 66

HORTICULTURAL DIVISION.  
*Disbursements and Receipts.*

	Disbursements.	Receipts.
Floriculture . . . . .	\$7,463 73	\$2,991 69
Forestry . . . . .	273 50	6 00
General horticulture . . . . .	8,865 58	330 58
Grounds . . . . .	8,693 62	10 10
Horticultural manufactures . . . . .	3,015 35	602 75
Landscape gardening . . . . .	587 25	401 50
Mount Toby . . . . .	3,358 91	2,273 06
Pomology . . . . .	5,161 43	2,979 10
Vegetable gardening . . . . .	6,114 50	2,558 15
Division totals . . . . .	\$43,533 87	\$12,152 93

HORTICULTURAL DIVISION — *Concluded.**Summary.*

	DR.	CR.
By total division receipts . . . . .		\$12,152 93
By bills receivable . . . . .		830 64
By net apportionment . . . . .		32,572 81
To total division disbursements . . . . .	\$43,533 87	
To bills payable . . . . .	25 69	
By balance . . . . .	1,996 82	
	\$45,566 38	\$45,556 38

*Inventory of Quick Assets.*

	Nov. 30, 1921.	Nov. 30, 1922.
Floriculture . . . . .	\$2,000 00	\$1,000 00
General horticulture (live stock) . . . . .	1,285 00	1,385 00
Horticultural manufactures . . . . .	150 00	420 00
Mount Toby . . . . .	660 00	98 75
Pomology . . . . .	1,400 00	1,300 00
Vegetable gardening . . . . .	245 00	75 00
	\$5,740 00	\$4,278 75

## EXPERIMENT STATION.

*Disbursements and Receipts.*

	Disbursements from Dec. 1, 1921, to Nov. 30, 1922.	Receipts from Dec. 1, 1921, to Nov. 30, 1922.	Apportionment for Year ending Nov. 30, 1922.	Balance to Credit.
Administration . . . . .	\$1,413 42	\$12 00	\$1,568 38	\$154 96
Agricultural . . . . .	9,763 79	547 09	9,468 13	—295 66
Agricultural economics . . . . .	675 46	—	675 00	— 46
Botanical . . . . .	2,557 89	—	2,546 36	—11 53
Chemical . . . . .	3,005 14	466 74	3,432 83	427 69
Cranberry . . . . .	4,298 39	6,138 21	4,004 46	—293 93
Entomological . . . . .	685 35	—	700 00	14 65
Freight and express . . . . .	536 96	—	300 00	—236 96
Library . . . . .	1,029 98	—	1,040 82	10 84
Meteorology . . . . .	595 04	—	600 00	4 96
Microbiology . . . . .	991 53	—	1,000 00	8 47
Pomology . . . . .	2,703 94	1,559 72	3,100 00	396 06
Poultry . . . . .	3,844 03	—	3,200 00	—644 03
Publications . . . . .	2,143 70	—	3,136 24	992 54
Salaries . . . . .	70,453 16	—	71,632 50	1,179 34
Treasurer's office . . . . .	408 69	—	400 00	—8 69
Veterinary . . . . .	737 80	—	800 00	62 20
Hatch fund . . . . .	—	15,000 00	—	—
Adams fund . . . . .	—	15,000 00	—	—
State Treasurer, account of schedules . . . . .	—	76,715 57	—	—
Income remitted to State Treasurer . . . . .	8,723 76	—	—	—
	\$114,568 03	\$115,439 33	\$107,604 72	\$1,760 45
Less refunds . . . . .	10 20	—	—	—
	\$114,557 83	\$115,439 33	—	—
Balance beginning fiscal year Dec. 1, 1921 . . . . .	—	3,112 50	—	—
Balance on hand Nov. 30, 1922 . . . . .	3,994 00	—	—	—
	\$118,551 83	\$118,551 83	—	—

EXPERIMENT STATION — *Concluded.**Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1921 . . . . .	-	\$3,112 50
Receipts from State Treasurer . . . . .	-	76,715 57
Receipts from United States Treasurer . . . . .	-	30,000 00
Receipts from other sources . . . . .	-	8,723 76
Total disbursements . . . . .	\$105,834 07	-
Receipts turned in to State Treasurer . . . . .	8,723 76	-
	\$114,557 83	\$118,551 83
Bills receivable Dec. 1, 1921 deducted . . . . .	-	1,340 16
Bills payable Dec. 1, 1921 deducted . . . . .	173 73	-
	\$114,384 10	\$117,211 67
Bills receivable Nov. 30, 1922 . . . . .	-	1,046 60
Bills payable Nov. 30, 1922 . . . . .	34 43	-
Balance . . . . .	3,839 74	-
	\$118,258 27	\$118,258 27

## EXTENSION SERVICE.

*Disbursements and Receipts.*

CLASSIFICATION.	Disbursements.	Receipts.	Apportionment.	Balance.
Administration . . . . .	\$3,271 64	\$106 96	\$4,036 18	\$764 54
Animal husbandry . . . . .	1,055 70	-	1,200 00	144 30
Co-operative marketing . . . . .	944 25	-	1,050 39	106 14
Correspondence courses . . . . .	1,654 33	860 12	1,512 69	-141 64
County agents' work . . . . .	1,335 22	-	1,200 50	-134 72
Clothing efficiency . . . . .	1,428 02	-	839 76	-588 26
Dairying . . . . .	81 47	2 65	450 00	368 53
Entomology . . . . .	22 80	-	25 00	2 20
Exhibits . . . . .	706 13	-	750 00	43 87
Extension courses at college . . . . .	1,489 34	-	1,200 00	-289 34
Extension schools . . . . .	125 39	-	268 67	143 28
Farm management demonstration . . . . .	1,245 19	49 70	1,604 70	359 51
Forestry . . . . .	45 20	-	-	-45 20
Home demonstration agents . . . . .	2,224 10	67 47	2,027 59	-196 51
Home gardening . . . . .	541 01	-	550 75	9 74
Horticultural manufactures . . . . .	1,683 76	-	1,200 00	-483 76
Junior extension work . . . . .	6,340 44	-	5,694 43	-646 01
Landscape extension . . . . .	566 22	-	1,200 00	633 78
Lectures . . . . .	53 59	-	50 00	-3 59
Library extension . . . . .	167 20	-	300 00	132 80
Nutrition and household management . . . . .	2,099 30	-	790 23	-1,309 07
Plant diseases . . . . .	-	-	25 00	25 00
Pomology . . . . .	1,769 70	-	1,501 23	-268 47
Poultry husbandry . . . . .	1,235 81	-	1,200 00	-35 81
Printing . . . . .	6,766 54	-	5,730 44	-1,036 10
Personal services . . . . .	50,693 81	-	52,290 00	1,596 19
Rural engineering . . . . .	196 92	-	500 00	303 08
Soils and crops . . . . .	653 42	-	1,005 76	352 34
State Treasurer, account of schedules . . . . .	-	88,396 50	-	-
Income to State Treasurer . . . . .	1,086 90	-	-	-
	\$89,483 40	\$89,483 40	\$88,203 32	-\$193 18



EXTENSION SERVICE — *Concluded.*  
*Summary.*

	Disbursements.	Receipts.
Balance Dec. 1, 1921 <sup>1</sup>	-	\$4,006 75
Receipts Nov. 30, 1922	-	1,086 90
Received from State Treasurer	-	88,396 50
Received from United States Treasurer	-	30,644 89
Disbursements to Nov. 30, 1922	\$115,744 32	-
Receipts turned in to State Treasurer	1,086 90	-
	\$116,831 22	\$124,135 04
Bills receivable Dec. 1, 1921 deducted	-	14 51
Bills payable Dec. 1, 1921 deducted	753 88	-
	\$116,077 34	\$124,120 53
Bills receivable Nov. 30, 1922	-	55 47
Bills payable Nov. 30, 1922	-	-
Balance	8,098 66	-
	\$124,176 00	\$124,176 00

<sup>1</sup> Includes Federal Smith-Lever Fund.

SMITH-LEVER FUND (FEDERAL).

	Disbursements.	Receipts.
Administration	\$112 64	-
Animal husbandry	70	-
District and county agents	5 60	-
Co-operative marketing	95	-
Farm management demonstration	2 45	-
Home economics	16 76	-
Home gardening	1 20	-
Junior Extension work	26 80	-
Pomology	42 60	-
Poultry husbandry	3 84	-
Printing and publications	742 50	-
Salaries	26,306 30	-
Clothing efficiencies	81 63	-
Nutrition and household management	3 85	-
State Treasurer	-	\$30,644 89
	\$27,347 82	\$30,644 89
Balance beginning fiscal year December 1, 1921	-	4,006 75
Balance on hand November 30, 1922	7,303 82	-
Totals	\$34,651 64	\$34,651 64

SHORT COURSES.

	Disbursements.	Receipts.	Apportionment.	Balance.
Agricultural economics	\$15 00	-	\$100 00	\$85 00
Agronomy	591 22	\$446 00	500 00	-91 22
Animal husbandry	103 94	290 00	121 01	17 07
Botany	-	6 50	-	-
Dairying	3,000 00	465 45	3,000 00	-
Domestic science	87 99	-	100 00	12 01
Entomology	41 75	-	50 00	8 25
Farm management	54 00	-	50 00	-4 00
Floriculture	99 09	68 00	100 00	91
Forestry	117 42	-	100 00	-17 42

SHORT COURSES — *Concluded.*

	Disburse- ments.	Receipts.	Apportion- ment.	Balance.
General horticulture . . . . .	\$170 38	\$114 50	\$200 00	\$29 62
Horticultural manufactures . . . . .	682 11	—	750 00	67 89
Library . . . . .	88 58	—	150 00	61 42
Mathematics . . . . .	—	4 00	—	—
Microbiology . . . . .	50 00	75 00	50 00	—
Personal services . . . . .	47,548 28	—	48,000 00	451 72
Pomology . . . . .	1,087 33	—	1,004 50	—82 83
Poultry husbandry . . . . .	599 23	980 00	600 00	77
Rural engineering . . . . .	846 88	326 50	850 00	3 12
Short course office . . . . .	3,652 17	58 83	3,814 73	162 56
Treasurer's office . . . . .	201 25	—	200 00	—1 25
Tuition . . . . .	—	3,459 13	—	—
Vegetable gardening . . . . .	304 82	150 00	338 70	33 88
Winter school registration . . . . .	—	450 00	—	—
	\$59,341 44	\$6,893 91	\$60,078 94	\$737 50
Less refunds . . . . .	130 00	—	—	—
	\$59,211 44	—	—	—

## SUMMARY.

	Dr.	Cr.
State appropriation . . . . .		\$60,078 94
Amount of receipts . . . . .		6,893 91
Amount of receipts transferred to State Treasurer . . . . .	\$6,893 91	
Department expenditures . . . . .	59,211 44	
Balance unexpended . . . . .	867 50	
Totals . . . . .	\$66,972 85	\$66,972 85

## MARKET-GARDENING FIELD STATION.

	Dr.	Cr.
Labor . . . . .	\$5,453 54	
Maintenance . . . . .	3,628 30	
Totals . . . . .	\$9,081 84	
Less refund . . . . .	3 45	
	\$9,078 39	
State appropriation . . . . .		\$9,230 36
Amount of receipts . . . . .		3,594 41
Amount of receipts transferred to State Treasurer . . . . .	\$3,594 41	
Department expenditures . . . . .	9,078 39	
Balance unexpended . . . . .	151 97	
Totals . . . . .	\$12,824 77	\$12,824 77

## SPECIAL APPROPRIATIONS.

	Date made.	Appropriation.	Amount expended to Date.	Unexpended Balance.
Market-Garden Field Station administration building	1921	\$10,000 00	\$10,000 00	-
Chemistry building	1922	150,000 00	56,726 37	\$93,279 63
Power plant improvements	1922	63,000 00	58,604 71	4,395 29
Purchase of Brooks Farm	1922	15,000 00	15,000 00	-
Tillson Farm improvements	1922	5,000 00	4,818 65	181 35
		\$243,000 00	\$145,143 73	\$97,856 27
Amount spent previous to Dec. 1, 1921	-	-	-	7,331 01
Amount expended during fiscal year	-	-	-	137,812 72
Unexpended balance Nov. 30, 1922	-	-	97,856 27	-
		\$243,000 00	\$243,000 00	\$243,000 00

## INVENTORY — REAL ESTATE.

*Land (Estimated Value).*

Angus land	\$800 00
Allen place	500 00
Baker place	2,500 00
Bangs place	2,350 00
Brooks farm	11,000 00
Brown land	500 00
Charmbury place	450 00
Clark place	4,500 00
College farm	37,000 00
Cranberry land	12,745 00
George Cutler, Jr., trustee	2,700 00
Dickinson land	7,850 00
Harlow farm and orchard	3,284 63
Hawley and Brown place	675 00
Kellogg place	3,368 45
Loomis place	415 00
Louisa Baker place	5,000 00
Market-Garden Field Station	4,800 00
Mount Toby demonstration forest	30,000 00
Newell farm	2,800 00
Old creamery place	1,000 00
Owen farm	5,000 00
Pelham quarry	500 00
Tillson farm	2,950 00
Westcott place	2,250 00

\$144,938 08

## INVENTORY — Continued.

*College Buildings (Estimated Value) 1922.*

	Inventory at Beginning of Year.	Per Cent deducted.	Value at Beginning of Year less Deterioration.	Repairs and Improvements during Year.	Total Value at Close of Fiscal Year.
Adams Hall	\$129,616 70	2	\$127,024 37	\$580 14	\$127,604 51
Apiary	2,905 76	2	2,847 64	37 18	2,884 82
Cashier's House	1,510 80	5	1,435 26	240 73	1,675 99
Clark Hall	61,376 07	2	60,148 55	918 04	61,066 59
Cold storage laboratory	10,586 37	2	10,374 64	75	10,375 39
Dairy barn and storage	30,958 65	3	30,028 89	124 09	30,162 98
Draper Hall	69,052 27	3	66,980 70	2,634 40	69,615 10
Drill Hall and gun shed	9,245 82	5	8,783 53	399 50	9,183 03
Durfee glass house, old	7,479 76	5	7,105 77	192 82	7,298 59
Durfee glass house, new	11,015 26	5	10,464 50	-	10,464 50
Farm blacksmith shop	444 39	3	431 06	-	431 06

INVENTORY — *Continued.**College Buildings (Estimated Value) 1922 — Concluded.*

	Inventory at Beginning of Year.	Per Cent de- ducted.	Value at Beginning of Year less De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Farm bull pens . . . . .	—	—	—	—	\$3,377 50
Farm bungalow . . . . .	\$2,563 57	3	\$2,486 66	\$22 71	2,509 37
Farmhouse No. 1 . . . . .	2,922 50	3	2,834 82	262 24	3,097 06
Farmhouse No. 2 . . . . .	4,366 22	8	4,016 92	31 85	4,048 77
Fernald Hall . . . . .	71,845 57	2	70,408 66	372 40	70,781 06
Flint Laboratory . . . . .	69,131 75	2	67,749 11	1,106 97	68,856 08
French Hall . . . . .	45,824 27	2	44,907 78	569 17	45,476 95
Grinnell Arena . . . . .	8,905 84	2	8,727 72	13 39	8,741 11
Grounds tool shed . . . . .	210 05	5	199 55	—	199 55
Harlow house . . . . .	2,008 97	5	1,908 52	48 04	1,956 56
Horse barn . . . . .	4,755 83	3	4,613 16	42 64	4,655 80
Head of division of horticulture . . . . .	2,187 92	5	2,078 52	408 08	2,486 60
Horticultural barn . . . . .	3,707 60	3	3,596 37	59 06	3,655 43
Horticultural tool shed . . . . .	1,615 97	3	1,567 39	—	1,567 39
Horticultural open shed . . . . .	494 05	5	469 35	—	469 35
Horticultural manufactures shed . . . . .	3,624 51	5	3,443 28	28	3,443 56
Hospital . . . . .	14,617 40	2	14,325 05	1,152 94	15,477 99
Jewett house and barn . . . . .	3,153 68	5	2,996 00	110 31	3,106 31
Machinery barn . . . . .	3,407 21	3	3,304 99	26 70	3,331 69
Market-Garden Field Station barn . . . . .	3,118 86	3	3,024 29	—	3,024 29
Market-Garden Field Station Foreman's cottage . . . . .	4,234 05	3	4,107 03	—	4,107 03
Market-Garden Field Station Greenhouse plant . . . . .	9,476 25	5	9,002 44	—	9,002 44
Market-Garden Field Station Wagon shed . . . . .	522 70	3	507 02	—	507 02
Market-Garden Field Station Administration building . . . . .	9,000 00	3	8,730 00	—	8,730 00
Market-Garden Field Station Boiler House . . . . .	5,820 00	3	5,645 40	—	5,645 40
Mathematical building . . . . .	4,670 07	5	4,436 57	101 80	4,538 37
Memorial Hall . . . . .	105,000 00	2	102,900 00	586 14	103,486 14
Microbiology building . . . . .	57,144 96	2	56,002 06	241 38	56,243 44
Military storage . . . . .	214 34	5	203 62	—	203 62
Mount Toby house and barn . . . . .	3,486 32	5	3,312 00	—	3,312 00
North dormitory . . . . .	26,916 37	2	26,378 04	841 43	27,219 47
Physics laboratory . . . . .	4,432 97	5	4,211 32	585 86	4,797 18
Piggery . . . . .	2,469 43	3	2,395 35	—	2,395 35
Poultry departments —					
No. 1, demonstration building . . . . .	1,481 31	2	1,451 68	64 35	1,516 03
2, oil house . . . . .	75 06	2	73 56	—	73 56
3, brooder, killing and fattening laboratory . . . . .	2,361 99	2	2,314 75	35	2,315 10
4, mechanics, storage building and incubator cellar . . . . .	3,367 23	2	3,299 89	669 78	3,969 67
5, laying house . . . . .	1,665 32	2	1,632 01	—	1,632 01
6, manure shed . . . . .	89 16	2	87 38	—	87 38
7, small henhouse . . . . .	44 87	2	43 97	—	43 97
8, breeding house . . . . .	1,423 70	2	1,395 23	50 06	1,445 29
9, experimental breeding house . . . . .	557 40	2	546 25	—	546 25
10, duck house . . . . .	92 25	2	90 40	70	91 10
11, unit house for 200 hens . . . . .	466 69	2	457 36	—	457 36
12, unit house for 100 hens . . . . .	376 57	2	369 04	—	369 04
Power plant and storage building including coal pocket . . . . .	48,055 29	2	47,094 18	1,177 66	48,271 84
President's house . . . . .	12,994 52	3	12,604 68	422 54	13,027 22
Rural engineering building . . . . .	15,316 55	2	15,010 22	284 22	15,294 44
Sheep barn . . . . .	1,380 88	3	1,339 45	3 58	1,343 03
South dormitory . . . . .	39,298 22	2	38,512 26	1,846 12	40,358 38
Stable for cavalry unit . . . . .	18,141 38	3	17,597 14	552 17	18,149 31
Stockbridge Hall . . . . .	166,475 88	2	163,146 36	1,284 45	164,430 81
Agronomy greenhouse . . . . .	1,924 16	2	1,885 68	78 27	1,963 95
Stockbridge house . . . . .	1,570 32	5	1,491 80	864 69	2,356 49
Stone chapel . . . . .	30,079 72	2	29,478 13	289 20	29,767 33
Turbine house . . . . .	18,436 15	2	18,067 43	—	18,067 43
Vegetable plant house . . . . .	4,160 45	5	3,952 43	412 88	4,365 31
Veterinary laboratory and stable . . . . .	21,343 68	2	20,916 81	1,305 10	22,221 91
Waiting station . . . . .	457 33	2	448 18	59 09	507 27
Wilder Hall . . . . .	33,171 15	2	32,507 73	577 91	33,085 64
Young stock barns . . . . .	5,635 11	3	5,466 06	42 40	5,508 46
	\$1,246,483 42	—	\$1,217,393 96	\$21,706 56	\$1,242,478 02



INVENTORY — *Continued.*  
*College Equipment (Estimated Value).*

Administrative division:		
Dean's Office		\$1,147 15
President's Office		2,728 50
Registrar's Office		1,238 97
Treasurer's Office		4,707 02
Agricultural division:		
Agronomy		8,444 94
Animal Husbandry		896 10
Dairy		25,838 54
Farm		20,905 57
Farm Livestock		26,602 00
Farm Management		984 39
General Agriculture		2,528 15
Poultry		10,752 27
Rural Engineering		6,999 62
Domestic Science		3,495 18
Dining Hall		26,183 81
Extension		12,968 93
General Science:		
Apiary		2,362 11
Botanical		24,038 35
Chemistry		10,454 42
Entomology		5,216 21
Mathematics		2,314 25
Microbiology		7,182 10
Physics		7,379 12
Veterinary		10,557 76
Zoölogy and Geology		17,346 34
Graduate School		97 55
Horticultural division:		
Floriculture		30,311 98
Forestry		2,567 46
General Horticulture		7,892 44
Grounds		2,086 52
Horticultural Manufactures		5,490 05
Landscape Gardening		5,522 31
Market-Garden Field Station		3,841 73
Mount Toby Reservation		176 00
Pomology		8,437 69
Vegetable Garden		3,706 07
Hospital		989 40
Humanities division:		
Economics and Sociology		202 70
Language and Literature		621 50
Library		126,958 35
Military		1,360 28
Operating and Maintenance:		
College Supply		1,659 83
Fire Apparatus		1,700 00
General Maintenance:		
Office		854 05
Carpentry and Masonry Supplies		5,349 71
Carpentry and Masonry Tools		4,087 28
Electrical Supplies		3,735 47
Electrical Tools		178 55
Electrical Commencement supplies		619 75
Heating and Plumbing supplies		10,268 00
Heating and Plumbing Tools		2,635 34
Painting Supplies		1,342 90
Painting Tools		283 73
Steam Main		53,620 69
Lighting Lines		9,930 79
Janitor's Supplies		1,401 29
Sewer Line		13,942 54
Water Mains		13,374 41
Power Plant:		
General Equipment		113,492 80
Tools		255 04
Supplies		465 18
Fuel		13,125 00

## INVENTORY — Continued.

## College Equipment (Estimated Value) — Concluded.

Physical Education . . . . .	\$1,776 65
Rural Social Science:	
Agricultural Economics . . . . .	1,599 35
Agricultural Education . . . . .	1,466 48
Rural Sociology . . . . .	376 06
Rural Social Science . . . . .	40 00
Short Course . . . . .	1,552 08
Textbooks . . . . .	2,878 40
Trophy Room . . . . .	1,200 00
Women's Dormitory . . . . .	9,912 30
Memorial Hall . . . . .	21,564 21
<b>Total . . . . .</b>	<b>\$738,221 71</b>

## Experiment Station Buildings (Estimated Value).

	Inventory at Beginning of Year.	Per Cent.	Cost at Beginning of Year, less Per Cent De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Year.
Agricultural laboratory . . . . .	\$14,763 72	2	\$14,468 45	\$66 76	\$14,535 21
Agricultural barn . . . . .	4,202 20	3	4,076 13	—	4,076 13
Agricultural farmhouse . . . . .	1,604 59	3	1,556 45	54 08	1,610 53
Agricultural glasshouse . . . . .	349 17	5	331 71	—	331 71
Brooks house . . . . .	—	—	—	—	2,500 00
Brooks barn and sheds . . . . .	—	—	—	—	1,500 00
Cranberry buildings . . . . .	3,080 19	5	2,926 18	—	2,926 18
Entomological glasshouses . . . . .	648 21	5	615 80	—	615 80
Plant and animal chemistry laboratory . . . . .	27,630 86	2	27,078 24	302 49	27,380 73
Plant and animal chemistry barns . . . . .	4,581 64	3	4,444 19	659 25	5,103 44
Plant and animal chemistry dairy . . . . .	1,615 97	3	1,567 49	—	1,567 49
Six poultry houses . . . . .	615 68	2	603 37	113 78	717 15
Tillson house . . . . .	527 88	5	501 49	448 58	950 07
Tillson barn . . . . .	977 41	5	928 54	—	928 54
Tillson poultry houses (4) . . . . .	—	—	—	—	2,749 75
Tillson incubator cellar . . . . .	—	—	—	—	713 50
<b>Totals . . . . .</b>	<b>\$60,597 52</b>	<b>—</b>	<b>\$59,098 04</b>	<b>\$1,644 94</b>	<b>\$68,206 23</b>

## Experiment Station Equipment (Estimated Value).

Apiary . . . . .	\$152 67
Agricultural Economics Department . . . . .	477 57
Agricultural Laboratory . . . . .	7,339 93
Botanical laboratory . . . . .	6,180 10
Chemical laboratory . . . . .	25,685 30
Cranberry Station . . . . .	3,841 80
Director's office . . . . .	5,031 18
Entomological laboratory . . . . .	24,063 18
Meteorological laboratory . . . . .	778 00
Microbiological laboratory . . . . .	2,771 20
Pomology . . . . .	4,609 19
Poultry department . . . . .	5,297 25
Treasurer's Office . . . . .	1,021 34
Veterinary . . . . .	594 76
<b>Total . . . . .</b>	<b>\$87,843 47</b>

INVENTORY — *Concluded.**Summary.*

Land . . . . .	\$144,938 08
College buildings . . . . .	1,242,478 02
College equipment . . . . .	738,221 71
Experiment Station buildings . . . . .	68,206 23
Experiment Station equipment . . . . .	87,843 47
<b>Total . . . . .</b>	<b>\$2,281,687 51</b>
<b>Acres.</b>	
College estate (area) . . . . .	702 19
Cranberry Station, Wareham (area) . . . . .	23 67
Market Garden Field Station, Lexington (area) . . . . .	12 00
Mount Toby demonstration forest (area) . . . . .	755 27
Rifle range . . . . .	46 20
Pelham quarry . . . . .	50
<b>Total acreage . . . . .</b>	<b>1,539 83</b>

## STUDENTS' TRUST FUND ACCOUNT.

	Disburse- ments, Year ending Nov. 30, 1922.	Receipts, Year ending Nov. 30, 1922.	Balance on Hand.	Balance brought for- ward Dec. 1, 1921.
Athletics . . . . .	\$17,035 79	\$19,595 56	\$295 06	\$—2,264 71
Dining Hall . . . . .	88,070 72	89,050 92	43 27	—936 93
Keys . . . . .	107 00	112 00	86 00	81 00
Students' deposits . . . . .	52,030 35	51,079 25	14,866 07	15,817 17
Social Union . . . . .	3,624 42	3,306 93	483 07	800 56
Textbooks . . . . .	11,981 69	10,904 95	1,080 22	2,156 96
Athletic Field . . . . .	—	—	169 70	169 70
Uniforms . . . . .	4,898 80	4,876 48	3,495 30	3,517 62
Cow-Testing . . . . .	22,734 40	23,438 14	2,220 34	1,516 60
<b>Totals . . . . .</b>	<b>\$200,483 17</b>	<b>\$202,364 23</b>	<b>\$22,739 03</b>	<b>\$20,857 97</b>
Balance beginning fiscal year . . . . .	—	20,857 97	—	—
Balance on hand Nov. 30, 1922 . . . . .	22,739 03	—	—	—
<b>Totals . . . . .</b>	<b>\$223,222 20</b>	<b>\$223,222 20</b>	<b>—</b>	<b>—</b>

## CONDENSED OPERATING STATEMENT OF THE DINING HALL.

	Operating Charges.	Income.
<b>1921.</b>		
Dec. 1, Balance . . . . .	—\$936 93	—
<b>1922.</b>		
Nov. 30, Total Disbursements . . . . .	88,070 72	—
Outstanding Bills . . . . .	5,225 15	—
Total Collections . . . . .	—	\$89,050 92
Accounts Outstanding . . . . .	—	1,100 71
Inventory . . . . .	—	10,482 31
Balance . . . . .	6,401 14	—
<b>Totals . . . . .</b>	<b>\$100,633 94</b>	<b>\$100,633 94</b>

ENDOWMENT FUND.<sup>1</sup>

	Principal.	Income.
United States grant (5 per cent) . . . . .	\$219,000 00	\$7,300 00
Commonwealth grant (3½ per cent) . . . . .	142,000 00	1,313 32
	-	\$10,613 32

<sup>1</sup> This fund is in the hands of the State Treasurer, and the Massachusetts Agricultural College receives two-thirds of the income from the same.

## BURNHAM EMERGENCY FUND.

	Market Value Dec. 1, 1922.	Par Value.	Income.
Two bonds American Telephone and Telegraph Company 4s at \$910	\$1,820 00	\$2,000 00	\$80 00
Two bonds Western Electric Company 5s at \$1,000	2,000 00	2,000 00	100 00
One United States Liberty Bond 4½s, \$980	490 00	500 00	21 25
Louisville Gas & Electric Co. 7s, \$1,000	500 00	500 00	35 00
	\$4,810 00	\$5,000 00	\$236 25
Unexpended balance Dec. 1, 1921 . . . . .	-	-	325 81
	-	-	\$562 06
Disbursements for fiscal year ending November 30, 1922 . . . . .	-	-	70 00
Cash on hand November 30, 1922 . . . . .	-	-	\$492 06

## LIBRARY FUND.

Five bonds New York Central & Hudson River Railroad Company 4s at \$920	\$4,600 00	\$5,000 00	\$200 00
Five bonds Lake Shore & Michigan Southern Railroad Company 4s at \$940	4,700 00	5,000 00	200 00
Two shares New York Central & Hudson River Railroad Company Stock at \$96	192 00	200 00	10 00
Amherst Savings Bank, deposit . . . . .	167 77	167 77	8 01
	\$9,659 77	\$10,367 77	\$418 01
Returned Funds . . . . .	-	-	1 15
	-	\$10,367 77	\$419 16
Disbursements for fiscal year, November 30, 1922 . . . . .	-	-	419 16

## SPECIAL FUNDS.

*Endowed Labor Fund (the Gift of a Friend of the College).*

Two bonds American Telephone and Telegraph Company 4s at \$910	\$1,820 00	\$2,000 00	\$80 00
Two bonds Lake Shore & Michigan Southern Railroad Company 4s at \$940	1,880 00	2,000 00	80 00
One bond New York Central Railroad debenture 4s . . . . .	920 00	1,000 00	40 00
One bond Louisville Gas and Electric 7s . . . . .	1,000 00	1,000 00	70 00
Amherst Savings Bank, deposit . . . . .	143 39	143 39	6 85
One United States Liberty Bond 4¼ . . . . .	980 00	1,000 00	42 50
	\$6,743 39	\$7,143 39	\$319 35
Unexpended balance December 1, 1921 . . . . .	-	-	10 96
Cash on hand November 30, 1922 . . . . .	-	-	\$330 31



SPECIAL FUNDS — *Continued.*  
*Whiting Street Scholarship Fund.*

	Market Value Dec. 1, 1922.	Par Value.	Income.
One bond New York Central debenture 4s . . . . .	\$920 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit . . . . .	271 64	271 64	13 02
	\$1,191 64	\$1,271 64	\$53 02
Unexpended balance December 1, 1921 . . . . .	—	—	502 63
Cash on hand November 30, 1922 . . . . .	—	—	\$555 65

*Hills Fund.*

Two United States Liberty Bonds 4½ at \$980 . . . . .	\$1,960 00	\$2,000 00	\$85 00
One bond American Telephone and Telegraph Company 4s, at \$910 . . . . .	910 00	1,000 00	40 00
One bond New York Central & Hudson River Railroad debenture 4s at \$920 . . . . .	920 00	1,000 00	40 00
One bond New York Central Railroad debenture 4s at \$920 . . . . .	920 00	1,000 00	40 00
Three bonds Pacific Telephone and Telegraph Company 5s, at \$970 . . . . .	2,910 00	3,000 00	150 00
One bond Western Electric Company 5s at . . . . .	1,000 00	1,000 00	50 00
Boston & Albany Railroad stock 3¾ bonds at \$145 . . . . .	526 00	362 00	31 68
Amherst Savings Bank, deposit . . . . .	72 75	72 75	3 46
Electric Securities Company bonds, 1½ bonds, \$950 . . . . .	1,121 00	1,180 00	59 00
Two bonds Louisville Gas and Electric 7s at \$1,000 . . . . .	2,000 00	2,000 00	140 00
	\$12,339 75	\$12,614 75	\$639 14
Unexpended balance Dec. 1, 1921 . . . . .	—	—	1,681 47
	—	—	\$2,320 61
Disbursements for fiscal year ending Nov. 30, 1922 . . . . .	—	—	401 79
Cash on hand November 30, 1922 . . . . .	—	—	\$1,918 82

*Mary Robinson Fund.*

Amherst Savings Bank deposit . . . . .	\$142 00	\$142 00	\$6 81
Boston & Albany Railroad stock ¾ share at \$145 . . . . .	54 00	38 00	3 32
Electric Securities Company bonds, 1½ bond at \$950 . . . . .	779 00	820 00	41 00
	\$975 00	\$1,000 00	\$51 13
Unexpended balance Dec. 1, 1921 . . . . .	—	—	393 48
Cash on hand Nov. 30, 1922 . . . . .	—	—	\$444 61

*Grinnell Prize Fund.*

Ten shares New York Central & Hudson River Railroad stock at \$96 . . . . .	\$960 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1921 . . . . .	—	—	245 74
	\$960 00	\$1,000 00	\$295 74
Disbursements for Prizes . . . . .	—	—	50 00
Cash on hand Nov. 30, 1922 . . . . .	—	—	\$245 74

*Students' Loan Fund of the Massachusetts Agricultural Club.*

First National Bank . . . . .	\$500 00	\$500 00	—
Disbursements for fiscal year ending Nov. 30, 1922 . . . . .	—	150 00	—
Cash on hand Nov. 30, 1922 . . . . .	—	\$350 00	—

SPECIAL FUNDS — *Continued.**Gassett Scholarship Fund.*

	Market Value Dec. 1, 1922.	Par Value.	Income.
One bond New York Central & Hudson River Railroad debenture 4s at \$920	\$920 00	\$1,000 00	\$40 00
Amherst Savings Bank deposit . . . . .	11 64	11 64	51
	\$931 64	\$1,011 64	\$40 51
Unexpended balance Dec. 1, 1921 . . . . .	—	—	385 27
Cash on hand Nov. 30, 1922 . . . . .	—	—	\$425 78

*Massachusetts Agricultural College (Investment).*

One share New York Central & Hudson River Railroad stock \$96 .	\$96 00	\$100 00	\$5 00
Unexpended balance Dec. 1, 1921 . . . . .	—	—	105 45
Cash on hand Nov. 30, 1922 . . . . .	—	—	\$110 45

*Danforth Keyes Bangs Fund.*

Two bonds Pacific Telephone and Telegraph Company 5s at \$970 .	\$1,940 00	\$2,000 00	\$100 00
Two bonds Union Electric Light and Power Company 5s at \$940 .	1,880 00	2,000 00	100 00
Two bonds American Telephone and Telegraph Company 4s at \$910 .	1,820 00	2,000 00	80 00
One United States Liberty Bond 4½s \$980 . . . . .	980 00	1,000 00	42 50
Interest from student loans . . . . .	—	—	90 93
	\$6,620 00	\$7,000 00	\$413 43
Unexpended balance Dec. 1, 1921 . . . . .	—	—	1,375 22
	—	—	\$1,788 65
Total loans made to students during fiscal year . . . . . \$4,551 00	—	—	—
Cash received on account of student loans . . . . . 2,750 00	—	—	—
Excess of loans made over accounts paid by students . . . . .	—	—	1,801 00
Cash overdrawn Nov. 30, 1922 . . . . .	—	—	—\$12 35

*John C. Cutter Fund.*

One bond Pacific Telephone and Telegraph Company 5s at \$970 . .	\$970 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1921 . . . . .	—	—	104 12
	\$970 00	\$1,000 00	\$154 12
Disbursements for fiscal year ending Nov. 30, 1922 . . . . .	—	—	87 69
Cash on hand Nov. 30, 1922 . . . . .	—	—	\$66 43

*William R. Sessions Fund.*

One \$500.00 bond New York Central & Hudson River Railroad 6s \$1,040	\$520 00	\$500 00	\$30 00
Three United States Liberty Bonds, two at \$1,000.00 and one at \$500.00, 4½s at \$980	2,450 00	2,500 00	106 25
One bond Adirondack Light and Power Company 6s . . . . .	1,010 00	1,000 00	60 00
One bond Southern Illinois Light and Power Company 6s . . . . .	1,000 00	1,000 00	—
	\$4,980 00	\$5,000 00	\$196 25
Toledo Light and Power Company . . . . .	—	—	35 00
Conemaugh Light and Power Company . . . . .	—	—	80 00
Earnings from exchange of bonds . . . . .	—	—	20 92
Unexpended balance Dec. 1, 1921 . . . . .	—	—	41 39
	—	—	\$373 56
Disbursements for fiscal year ending Nov. 30, 1922 . . . . .	—	—	33 50
Cash on hand Nov. 30, 1922 . . . . .	—	—	\$340 06

SPECIAL FUNDS — *Concluded.*  
*Alvord Dairy Scholarship Fund.*

	Market Value Dec. 1, 1922.	Par Value.	Income.
One United States Liberty Bond 4¼	\$980 00	\$1,000 00	\$42 50
One bond Southern Illinois Light and Power Co. 7s	1,015 00	1,000 00	—
Two bonds Great Western Power Co. 6s \$1,000	2,000 00	2,000 00	90 00
	\$3,995 00	\$4,000 00	\$132 50
Toledo Light and Power Company	—	—	35 00
Conemaugh Light and Power Company	—	—	160 00
Earnings from exchange of bonds	—	—	64 00
Unexpended balance Dec. 1, 1921	—	—	768 61
Cash on hand Nov. 30, 1922	—	—	\$1,160 11

SUMMARY OF BALANCE ON HAND OF THE INCOME FROM FUNDS HELD IN TRUST BY THE  
 MASSACHUSETTS AGRICULTURAL COLLEGE.

Burnham Emergency Fund	\$492 06
Endowed Labor Fund	330 31
Whiting Street Scholarship Fund	555 65
Hills Fund	1,918 82
Mary Robinson Fund	444 61
Grinnell Prize Fund	245 74
Gassett Scholarship Fund	425 78
Massachusetts Agricultural College Investment Fund	110 45
Danforth Keyes Bangs Fund	—12 35
John C. Cutter Fund	66 43
William R. Sessions Fund	340 06
Alvord Dairy Scholarship Fund	1,160 11
Massachusetts Agricultural Club	350 00

\$6,427 67

350 00

\$6,077 67

J. D. W. FRENCH FUND.

Framingham National Bank	\$6,847 55
Worcester County Institution for Savings	1,728 82
Natick Five Cents Savings Bank	391 16
Millbury Savings Bank	1,685 35

\$10,652 88

Less amount withdrawn from Framingham National Bank 500 00 |

\$10,152 88

Amount expended for live stock exhibit at Eastern States Fair 455 20 |

Cash on hand 44 80 |

Total amount available \$10,197 68 |

I hereby certify that I have this day examined the Massachusetts Agricultural College Account, as reported by the Treasurer, Fred C. Kenney, for the year ending November 30, 1922. All bonds and investments are as represented in the Treasurer's report. All disbursements are properly vouched for, and all cash balances are found to be correct.

CHARLES A. GLEASON,  
*Auditor.*

JAN. 2, 1923.

## HISTORY OF SPECIAL FUNDS.

## Burnham emergency fund:

A bequest of \$5,000 from T. O. H. P. Burnham of Boston made without any conditions. The trustees of the college directed that \$1,000 of this fund should be used in the purchase of the Newell land and Goessmann Library. The fund now shows an investment of

\$4,000 00

## Library fund:

The library of the college at the present time contains 69,272 volumes. The income from the fund raised by the alumni and others is devoted to its increase, and additions are made from time to time as the needs of the different departments require. Dec. 27, 1883, William Knowlton gave \$2,000; Jan. 1, 1894, Charles L. Flint gave \$1,000; in 1887, Elizur Smith of Lee, Mass., gave \$1,315. These were the largest bequests and now amount to

10,000 00

## Endowed labor fund:

Gift of a friend of the college in 1901, income of which is to be used for the assistance of needy and deserving students.

5,000 00

## Whiting Street scholarship fund:

Gift of Whiting Street of Northampton, for no special purpose, but to be invested and the income used. This fund is now used exclusively for scholarship

1,000 00

## Hills fund:

Gift of Leonard M. and Henry F. Hills of Amherst, Mass., in 1867, to establish and maintain a botanic garden

10,000 00

## Mary Robinson fund:

Gift of Miss Mary Robinson of Medfield, in 1874, for scholarship

1,000 00

## Grinnell prize fund:

Gift of Hon. Wm. Claffin, to be known as the Grinnell agricultural prize, to be given to the two members of the graduating class who may pass the best oral and written examination in theory and practice of agriculture, given in honor of George B. Grinnell of New York

1,000 00

## Gassett scholarship fund:

Gift of Henry Gassett of Boston, the income to be used for scholarship

1,000 00

## Massachusetts Agricultural College investment fund:

Investment made by vote of trustees in 1893 to purchase one share of New York Central & Hudson River Railroad stock. The income from this fund has been allowed to accumulate

100 00

## Danforth Keyes Bangs fund:

Gift of Louisa A. Baker of Amherst, Mass., April 14, 1909, the income thereof to be used annually in aiding poor, industrious, and deserving students to obtain an education in said college

6,000 00

## John C. Cutter fund:

Gift of Dr. John C. Cutter of Worcester, Mass., an alumnus of the college, who died in August, 1909, to be invested by the trustees, and the income to be annually used for the purchase of books on hygiene

1,000 00

## Alvord dairy scholarship fund:

Gift of Henry E. Alvord, who was the first instructor in military tactics, 1869-71, and a professor of agriculture, 1885-87, at this institution. The income of this fund is to be applied to the support of any worthy student of said college, graduate or postgraduate, who may be making a specialty of the study of dairy husbandry (broadly considered) with the intention of becoming an investigator, teacher or special practitioner in connection with the dairy industry, provided that no benefits arising from such fund shall at any time be applied to any person who then uses tobacco in any form, or fermented or spirituous beverages, or is known to have done so within one year next preceding

4,000 00

## William R. Sessions fund:

In accordance with the request of my deceased wife, Clara Markham Sessions, made in her last will, I bequeath to the trustees of the Massachusetts Agricultural College, Amherst, Mass., the sum of \$5,000, it being the amount received by me from the estate of the said Clara Markham Sessions. The said \$5,000 to be kept by the said trustees a perpetual fund, the income from which shall be for the use of the Massachusetts Agricultural College; and according to the further request of my deceased wife, made in her last will, this is to be known as the William R. Sessions fund, and is to be a memorial of William R. Sessions; and it is my special request that the said trustees shall make record of the fact that this fund came from the estate of my deceased wife, Clara Markham Sessions, in accordance with her request made in her last will

5,000 00

## J. D. W. French Fund

10,000 00

## Massachusetts Agricultural Club

500 00

10,500 00

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 \$59,600 00

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FRED C. KENNEY,  
Treasurer.













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1922/23

PUBLIC DOCUMENT

No. 31

# THE M. A. C. BULLETIN AMHERST, MASSACHUSETTS

VOLUME XVI FEBRUARY, 1924 NUMBER 2

PUBLISHED EIGHT TIMES A YEAR BY THE MASSACHUSETTS  
AGRICULTURAL COLLEGE: JAN., FEB., MARCH, MAY,  
JUNE, SEPT., OCT., NOV. ENTERED AT THE POST  
OFFICE, AMHERST, MASS., AS SECOND CLASS MATTER

## THE SIXTY-FIRST ANNUAL REPORT OF THE MASSACHUSETTS AGRICULTURAL COLLEGE

ISSUED IN ACCORDANCE WITH SECTION 8, CHAPTER 75, OF THE GENERAL LAWS

### PART I.—THE REPORT OF THE PRESIDENT AND OTHER OFFICERS OF ADMINISTRATION FOR THE FISCAL YEAR ENDED NOV. 30, 1923



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PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE

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PAYSON SMITH, *Commissioner of Education.*

KENYON L. BUTTERFIELD, *President of Massachusetts Agricultural College.*

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## MASSACHUSETTS AGRICULTURAL COLLEGE.

### REPORT OF THE PRESIDENT.

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#### REVIEW OF THE YEAR.

##### Resignations and Retirements.

During the year two members of our teaching staff reached the age of seventy and retired as required by State law.

Professor William R. Hart left our service March 31st. He joined the staff in 1907 as Professor and Head of the Department of Agricultural Education. This was the first institution in the country to recognize Agricultural Education as a separate department. Professor Hart soon became recognized as one of the aggressive and sane thinkers in the field of agricultural education. He did more than any other individual in the State to broadcast the idea of Boys' and Girls' Clubs and to organize them for work. Among the four-year students he always stimulated a keen interest in education. Prior to 1907 there were probably less than a dozen M. A. C. men teaching in Massachusetts. Of the graduates of the last sixteen years (1908 to 1923) 122 are teaching in Massachusetts, 108 are in schools or colleges outside of Massachusetts and 35 are engaged in Extension teaching. It has been said of Professor Hart that he "had the clearest vision of the fundamental basis of vocational training of any man engaged in work dealing with the theory of such training. This was openly recognized by many. He held steadfastly to his ideal of what his department should be and never wavered under the most discouraging circumstances."

Professor W. S. Welles, who joined our staff in 1919, has been made Head of the Department of Agricultural Education. Professor Harry N. Glick has been brought into the Department to fill the vacancy caused by Professor Hart's retirement. Professor Glick was raised on an Illinois farm and has had wide experience in educational work; he has taught school many years and has pursued graduate study in education at the University of Illinois.

Dr. Charles Wellington retired May 4th. A graduate of the class of 1873, he returned to teach in the Department of Chemistry in 1885. From 1882 to 1885 he studied in Germany, receiving the Degree of Doctor of Philosophy at the University of Göttingen in 1885. He was one of the first chemists trained by the late Dr. Goessmann of whom Dr. Wellington was a loyal disciple. Dr. Wellington gave 38 years of faithful service to the College, during which time he won the respect and love of a host of M. A. C. men.

Arthur N. Julian, who has been teaching German since 1912 and who has been studying Chemistry for three or four years, has been transferred to the Department of Chemistry as Assistant Professor, to fill the vacancy caused by the retirement of Dr. Wellington.

On August 31, Professor S. M. Salisbury resigned as Professor and Head of the Department of Animal Husbandry. Professor Salisbury joined our staff in 1919 and has maintained the high standing of this department established by Professor McNutt and Professor McLean. Professor Salisbury left to accept a position in the Extension Service of the College of Agriculture at the Ohio State University.

Near the close of the fiscal year, Harold F. Tompson, Professor and Head of the Department of Vegetable Gardening, resigned in order to devote his at-

tention to the supervision of his market gardening farm at Seekonk, Mass. Professor Tompson graduated from the Massachusetts Agricultural College in 1905; served as instructor in market gardening here for two and one-half years, and after further experience in teaching and in practical work, in 1914, was called back as Head of the Department. In addition to directing the resident teaching in Vegetable Gardening, he had charge of the Market Garden Field Station at East Lexington; he assisted in the selection of the site and planned the program for the demonstration work there. He has been eminently successful in meeting the needs of the market gardening industry as they have been developed in the vicinity of Boston and his service has been uniformly approved by the market gardeners.

In September, Professor James A. Foord resigned as Head of the Division of Agriculture and will, as soon as his successor is appointed, devote his entire time to the Department of Farm Management. Professor Foord has been Head of the Division of Agriculture since 1907, during which time, from a small department, the Division, as it is now organized, has been built up, both with respect to personnel and to buildings. During this time Professor Foord has had charge of the details of this large development in which he has rendered a most conscientious and highly painstaking service.

On August 25, 1923, Newton Wallace, who from 1896 to 1917 had charge of the power plant and served as electrician and engineer of the College, died at Huntington, Mass. For many years he was a conspicuous figure on the campus and to him is due the credit for the early development of the central heating plant, laying out of steam, water and sewer mains, and other problems connected with the supplying of light and power for the various buildings.

### **Improvements and New Construction.**

The Legislature of 1923, as was contemplated in 1922, made an appropriation of \$150,000 for the completion of the Chemistry Laboratory. Owing to labor and other difficulties, work on this building has progressed very slowly. It is doubtful whether the building will be completely ready for occupancy before the summer of 1924.

The appropriation of \$10,500 for roads and walks has been used on "The Olmsted Road" in constructing a road with stone base and asphalt surface, from the entrance to the campus at Pleasant Street, extending a distance of 1300 feet; and for the construction of a cement sidewalk parallel with this road. For obvious reasons it seemed desirable to locate the new walk north of the row of trees, extending along this road; this made necessary the extension of the bridge across the stream. The result is entirely satisfactory and commends itself to all interested. The Division of Highways of the State Department of Public Works supervised the construction of this road; this arrangement insured us the maximum of efficiency and economy.

The other special appropriations of 1923 for live-stock, for additional buildings at the Tillson Farm, for service buildings for the Division of Horticulture and for a farmhouse to replace the one destroyed by fire in December 1922, have been expended for the purposes specified.

### **Commencement.**

Owing to a feeling on the part of students that they were placed at a disadvantage in securing summer work by the late Commencement scheduled for 1923, the Trustees voted to dispense with the spring vacation, cut down the length of the spring term to eleven weeks and close the institution for the summer vacation June 11. Accordingly, the usual commencement exercises were held from Friday to Monday, June 8 to 11. The commencement address on June 11 was delivered by Honorable W. N. Ferris, United States Senator from Michigan. The degree of B. Sc. was conferred upon 82 men and 7 women; the degree of M. Agr. upon 2 men; the degree of M. Sc. upon 8 men and 1 woman and the degree of Ph. D. upon one man.



### Enrollment of Students.

*In Courses of Collegiate Grade.* — It was pointed out in the report of a year ago that the attendance of students at the Agricultural Colleges had steadily declined during the past few years. The Massachusetts Agricultural College has maintained its enrollment better than the majority of similar institutions, although this year, there is a slight falling off in total attendance; the total is 431 exclusive of the Graduate School as compared with 470 in 1922. The enrollment in the entering class is 125 or approximately two-thirds that of a year ago. The cause for the reduction in attendance, in this and other similar institutions, has not been satisfactorily explained. Probably the feeling that the food producers of the country are receiving an inadequate return for their service is reflecting itself in the minds of those who would otherwise attend an agricultural college for the purpose of preparing themselves for some agricultural occupation. Statistics have been compiled from approximately half the agricultural colleges of the country showing their comparative enrollment of freshman students in 1922 and 1923. Of the twenty-six institutions reporting, seven show a gain in Freshman registration in 1923 over 1922; the total gain of these seven institutions is 50. Nineteen institutions report a decrease in enrollment and the total loss in these nineteen institutions is 461.

*In the Two-Year Course.* — There is a marked decrease in the enrollment of two-year students. In 1920 the enrollment was 277; in 1921, 293; in 1922, 257 and in 1923, 169. This decrease is due in part to the withdrawal from this institution of a number of Federal Board students who have either finished their training or who have been transferred to other institutions established primarily for the rehabilitation of service men. The analysis of attendance in all courses is found on page 25.

### Students entering the Freshman Class in 1923.

Of the Freshmen entering this autumn, slightly over 95% are from Massachusetts. Apparently the requirement of an annual tuition of \$180 for students from states other than Massachusetts has very effectively cut off the attendance from other states. Formerly 10% to 15% of each Freshman class came from other states. I should like to ask whether this tendency, brought about by the increase in tuition, is wholly desirable? Ought there not to be encouraged a normal exchange of students between the Agricultural Colleges? At present more Massachusetts boys are being educated in state institutions outside of Massachusetts than the total of non-resident students at the Massachusetts Agricultural College.

The opinion has been frequently expressed that students do not come to the Massachusetts Agricultural College because of their interest in agriculture. A special inquiry was made of students entering this autumn, to ascertain why they came to the Massachusetts Agricultural College. 67% stated that they came because of their interest in agriculture; 25% stated that they came because they desired a general education, either with or without respect to agriculture; 5% came with the idea of transferring to other institutions at the end of one or two years, and 3% came because of other considerations.

### Research Work in Forestry.

In June an agreement was entered into with the United States Forest Service providing for the location at this institution of a Forest Experiment Station for the Northeastern area. The College, by the agreement, obligates itself to supply quarters, including office space and laboratory facilities, heat, light and janitor service for the staff which will be placed here. At the outset this staff will include approximately five foresters, one pathologist, two entomologists and two clerks. The staff of foresters is being accommodated in French Hall. As the Pathologist and Entomologists are added, they will be housed respectively in Clark Hall and Fernald Hall. There has been some delay in the staff coming to Amherst and at present not all are here. The work, however, is well under way.

This co-operative arrangement will cost the institution practically nothing and will bring to it the prestige attendant upon the location of such an Experiment Station, and will greatly strengthen the teaching work in Forestry.

### Excursions to the College.

During the past few years groups of people from various parts of the State have been coming to the College in greater numbers. Some of these groups attend formal programs such as Farmers' Week or High School Day, while others come for less definite objectives but all for the purpose of inspecting the institution with more or less thoroughness. To illustrate the extent to which these excursions are now being made to the College, the following list is given, covering the fiscal year just closing.

- December 19-22, 1922, Conference of County Agents, Attendance, 50.
- January 1-Feb. 21, 1923, Series of 10-day Dairy Courses, 24.
- January 19-20, Alumni Day, 115; Polish Farmers' Day, 100.
- March 11, Sheep Shearers' Day, 75.
- May 4, Massachusetts Legislature, 225.
- May 5, High School Day, 750.
- May 12, Phi Sigma Kappa — 50th anniversary, 100.
- May 12, Western Massachusetts Headmasters Club, 25.
- May 16, Mass. Veterinary Medical Association, 50.
- May 16, N. E. Ice Cream Manufacturers Assn., 35.
- May 19, Parents' Day (Women Students), 21.
- May 26, Western Massachusetts Grammar Masters Club, 25.
- June 14, Executive Committee Mass. State Grange, 3.
- June 15, Directors of Mass. State Chamber of Commerce, 25.
- June 27-29, Agricultural Instructors, Connecticut, 19; Boys' Farm Camp in Sunderland, 30.
- June 23-30, One Week School for Florists, 11.
- July 9-13, Country Clergymen's Course, 32.
- July 17, Middlesex County Club Workers, 75; Boys' Camp, 40; Camp Gilbert, 100.
- July 31-Aug. 3, Conference of Teachers of Agriculture, 70.
- July 24-27, Farmers' Week, 2,500.
- August 1, Hampden County Club Members, 200.
- August 10, Connecticut Pomological Society, 80.
- August 11, Hampshire-Franklin Holstein-Friesian Breeders Club, 60.
- August 14, Permanent Firemen's Association, 110.
- August 18, Agricultural Teachers, Cornell Univ., 14.
- August 21-24, New England Grange Lecturers' Conference, 750.
- August 31, Hampshire-Hampden Forestry Conference, 25.
- September 10, Camp Vail Club Leaders Training School, 15.
- September 17-21, Western Massachusetts Library Club, 80.
- October 5, Executive Comm. Associated Industries of Massachusetts, 40.
- October 12, Mt. Toby Day, 100.<sup>1</sup>
- October 18, Governor's Council, 8.
- October 18, Excursion from Springfield, National Council of Congregational Churches, 800.
- October 20, Athol Boys and Girls Clubs, 45.
- October, Delegation from Argentine to World's Dairy Congress, 4.
- November 22-23, Advisory Board State Department of Agriculture, 3.

### Visit of the Legislature.

The most important visit to the College during the year was that of the Massachusetts Legislature. Just prior to the opening of the last session, Senator Haigis of Greenfield visited the College, and at that time asked whether we would welcome a visit from the Legislature. Early in the session he introduced an order providing for the inspection. The order was passed on April 11, and the

<sup>1</sup> Visitors.



day set for the visit was Friday, May 4. The legislative session was adjourned in order to allow all members to make the trip to Amherst. A special train composed of steel coaches, left North Station at 8:30 A.M. and arrived at Amherst at 11:40. Here the guests were met by eighty automobiles, placed at our disposal by citizens of Amherst and by alumni in nearby towns. Each automobile was accompanied by a guide who was a member of the staff, an alumnus, a Trustee, or a student. A general tour of the campus was made, thus giving the visitors a comprehensive view of the equipment and extent of the physical plant. This tour of inspection occupied about fifty minutes and was followed by luncheon at the Dining-Hall. Immediately after luncheon the Legislature adjourned to Bowker Auditorium where the platform had been extended to accommodate all the guests. The students assembled early and were in their seats when the Legislature proceeded to the platform. The gallery was well filled with members of the Faculty and townspeople.

Honorable Charles A. Gleason, Vice President of the Board of Trustees, presided. A brief address of welcome was made by President Butterfield, to which responses were made by Honorable Frank G. Allen, President of the Senate, and Honorable B. Loring Young, Speaker of the House of Representatives. From 2:30 to 4:00 P.M. each automobile party, still accompanied by a guide, visited from four to six departments of the institution where some form of class-work was in operation. This plan made it possible for every department to be visited for a sufficient length of time to fully acquaint the members of the Legislature with the research and teaching work carried on. At 4:00 the guests assembled on the Cavalry Riding Field south of the Veterinary Laboratory where bleachers had been provided. Here a parade of the live-stock was held, each animal presented having been fitted for the show by a student. Professor Salisbury, with a megaphone, explained the breed and record of each animal and also gave the name of the student accompanying it.

The last event of the day was a cavalry drill on the riding field. At 5:00 P.M. the special train left Amherst for Boston.

This is the only time since February 1868, that the entire legislature has visited the Agricultural College. 200 out of 280 members were present. Very few of these men had ever visited the College before and practically all expressed surprise at the size of the institution and many voiced their approval of the type of work carried on.

The visit was a significant occasion for the College and one which the officers had long hoped would be brought about. Because so little was known about the College, its interests have been frequently neglected.

To Senator Haigis belongs the credit for initiating the idea of this project and for bearing the responsibility for seeing it through the Legislature. However, many Alumni and friends of the College throughout the State, as soon as they learned that this plan was being considered, used their influence in persuading members of the Legislature that such a trip would be of value to them as well as to the Institution. A number of alumni accompanied the Legislature to Amherst and assisted in entertaining them. Citizens of Amherst contributed generously of their time as well as of their automobiles, in taking the Legislature about the Campus. The students extended a most enthusiastic welcome and provided a box-lunch for the members on the train back to Boston.

The direct expense to the State from College funds was nominal. The Legislature paid for the special train. The automobile service was generously donated. The luncheon and souvenir booklets were paid for from a private fund.

### Boys' Camp.

For several years before the war and one year since the war, a Boys' Camp was conducted on our Campus. In previous years the expense to the institution had been rather more than was thought to be justified. However, there has always been considerable demand for a camp of this kind and the interest shown in it by those attending has always been of the best. In 1923, therefore, it was decided to organize a camp on a somewhat different financial basis than previously. Mr. Mellen, Field Agent of the College, who has had ample experience

in Boy Scout work, assumed responsibility for organizing and supervising the camp. The camp opened June 30 and closed July 28. The average registration per week was 25 and the total number of boys was 40. The boys were charged \$10 per week, which covered their board, supervision and incidental expenses. On this basis the camp, from its operating expenses, returned a slight balance to the State Treasury. The College, however, had provided the publicity, the general supervision given by Mr. Mellen, and the tents. With the larger enrollment which is possible without greatly increasing the overhead expense it is probable that the income would exceed the operating expenses sufficiently to offset the time cost of supervision and the publicity.

The camp is designed to appeal to country boys who cannot afford to patronize the more expensive private camps and also to city boys who have an interest in agriculture and outdoor life. The daily camp program includes instruction in agriculture as well as recreation.

The camp this year was well organized and was well supervised and probably, if it is continued, will receive adequate support.

### Mountain Day.

On October 12, 1923, there was revived a tradition which has lapsed for many years, namely, that of Mountain Day. This year an outing was planned on Mount Toby where in co-operation with the State Department of Conservation, a 60-foot steel tower has recently been erected. Friends of the College from surrounding towns were invited to join the students and faculty on this outing. It is estimated that about 800 were present. Following the luncheon at the summit at 12 o'clock, there was a brief program of speaking by President Butterfield and Honorable W. A. L. Bazeley, and a pageant written by Professor Frank P. Rand of our English Department was acted by students and members of the staff.

This affair so thoroughly commended itself to the students and faculty that it is expected to become an annual event.

### Recommendations for Legislation.

Two Amendments to existing laws are recommended by the Trustees.

#### 1. FEED LAW.

*Be it enacted, etc.*

That section two hundred and twenty-seven of chapter ninety-four of the General Laws of the commonwealth, as amended by act of legislature in chapter four hundred, nineteen hundred and twenty-two, be changed by omitting the word "twenty" from line nine and substituting therefor the word "fifteen", so as to cause this line to read, "Pay to said director or his authorized deputy a registration fee of fifteen dollars."

The purpose of this Amendment is to reduce from twenty dollars to fifteen dollars the brand fee charged for the collection and analysis of commercial feed stuffs. The reason for recommending the change is that the present tax is higher than is justified by the work done. The appropriation for this work for 1923 was \$9,000. The appropriation request for 1924 is \$9,500. The income from the brand tax in 1923 was \$19,420.

#### 2. PUBLICATIONS.

*Proposed Amendment to Section 9, Chapter 7, of the General Laws of Massachusetts.*

The above section should be changed to read as follows:

"This section shall not apply to publications issued by the officers of either branch of the general court, or issued under special authority given by the general court, or to the regular annual reports of the attorney general, state treasurer, or state secretary, or to publications reporting results of research work conducted by the Department of Education through the Massachusetts



Agricultural Experiment Station, or to reports of capital trials prepared by the attorney general under Section 11 of Chapter 12, or to publications prepared by the state secretary in conformity with Sections 2 and 4 of Chapter 5”.

This in effect adds the research publications of the Massachusetts Agricultural Experiment Station to the list of exceptions previously recognized. This is necessary in order that the effectiveness of the Experiment Station as a research institution may be maintained. An essential requisite in the work of any research institution is certainty of publication without fear or favor, and in such a way as to make the author or the research worker fully responsible for the character, accuracy and efficiency with which the work is done. Any method of state control which prevents publication, or which through its editorial policy may prevent effective publication, may vitiate the results of the work, and make unproductive the expenditures of time and money, for such work. For all of these reasons, therefore, an exception to the general ruling should be made in favor of the Agricultural Experiment Station. This exception, however, should not be considered to include those publications of the Experiment Station which are other than *bona fide* reports of actual research work.

### Occupations of Graduates.

The occupations of the graduates of our four-year course is still a subject of considerable discussion among those interested in the college. On the basis of returns received within a year, an analysis has been made of the occupations of alumni for the past twenty years, namely the classes of 1903 to 1922, and from this analysis the following statistics are compiled:

*Occupational Classifications of Graduates based on Statistics collected 1923.*

*Classes 1903 to 1922, inclusive.*

	Number.	Per Cent.
Living graduates whose occupations are known . . . . .	1,190	
Agricultural Vocations		
Farm Operators, including market gardeners . . . . .	251	21.09
Landscape gardeners, foresters and florists . . . . .	96	8.07
Agricultural College administrators and teachers . . . . .	79	6.64
Agricultural school administrators and teachers . . . . .	60	5.00
Experiment Station administrators and experts . . . . .	27	2.27
Extension Service administrators and experts . . . . .	37	3.11
State agricultural experts . . . . .	32	2.69
U. S. D. A. administrators and experts . . . . .	53	4.45
Agricultural business . . . . .	69	5.80
Miscellaneous agricultural experts . . . . .	59	4.95
Total . . . . .	763	64.12
Non-agricultural vocations		
Business . . . . .	211	17.73
Engineers . . . . .	46	3.86
Physicians . . . . .	18	1.51
Teachers . . . . .	93	7.81
Miscellaneous . . . . .	59	4.95
Total . . . . .	427	35.88
Unknown occupations . . . . .	97	

### IMMEDIATE PROBLEMS.

#### The Question of Expansion and Support.

THE PRESENT BUDGET. — For some years it has been the policy of the State Administration to discourage expansion in our work. We have realized the need of economy and as a consequence have not pressed for large developments. In the present budget, for example, we are not asking for major buildings,

much as we need them; but we do wish to secure special appropriations sufficient to enable us to carry out a number of comparatively small projects for equipment, some of which have been repeatedly requested by departments for periods ranging from two to six or eight years. We are seeking only a slight increase in the budget for maintenance of instruction. In our Extension Service we should have a few new positions on the staff to permit us to meet demands that are coming to be very pressing and that will round out the scope of our service for the period of the next few years at least. It is an unfortunate fact that the Extension Service has been getting progressively smaller sums for maintenance for several years past. The assumption at the State House seems to be the fallacious one that the work of the County Extension Service will gradually make unnecessary the work of the State Extension Service. A really serious phase, however, of our failure to expand lies in the field of the Experiment Station. True, last year three or four new staff positions were granted; but there should be established at least ten more new positions in the immediate future. There is no need to argue with you the importance of investigational work; but I do desire to stress the necessity of early and substantial increases in our equipment for research. We are not keeping up with the demands of the situation.

THE FOOD SUPPLY CAMPAIGN. — Some years ago, we at the College began to think rather seriously of the fact that it was becoming more and more difficult to advise the farmers of Massachusetts with respect to their long-term policies, until we know more about the market for their products — that is to say, until we knew more about what the food consumers of the State require and where they get it. We discovered that certainly not more than 15% and possibly not more than 10% of the food consumed in the State was grown in the State. We were obliged to ask ourselves, "To what extent and in what lines of agricultural endeavor is it probable that the farmers of Massachusetts can compete with farmers in other parts of the country and of the world?" Thus we were led inevitably toward the consideration of such questions as marketing, transportation, and storage. But we could not stop even there. Problems of waste induced us to consider food conservation. Finally we perceived that we must understand human nutrition and the dietaries of consumers. And then we found that so closely inter-related were all of these matters that we had virtually one unified problem — the problem of the Massachusetts Food Supply. And we said to ourselves "Here is *our* task. We are convinced that we cannot do the best for the farmers unless we compass the entire problem. Moreover, here is something, growing out of the agricultural character of our college enterprise, that concerns every person in the Commonwealth."

The full realization of this enlarged conception of our work probably came during the war. As far back as in my report of 1917 I outlined the problem of food supply, stating, at the time, that this now seemed to be our field. Some three years ago you authorized me to proceed to try to interest various groups of citizens in the larger function of the College. It seemed wise to try to make clear to these groups that the College is the concern of all people of the State; that its field includes the food supply problem; and that this problem is one of the major economic questions of our time. My absence in China prevented an earlier carrying out of your authorization, but during the past year we have definitely been in touch with the Grange, with the State Chamber of Commerce and many city Chambers of Commerce, with The Associated Industries, with representatives of organized labor, with the State Federation of Women's Clubs, and with many Rotary and Kiwanis and similar business men's clubs. We have lectured before these groups on the food supply problem and the relation of the College to it. We are now preparing literature for distribution by these organizations. We have had visits to the College from the official executive bodies of most of these groups, and under your authorization a bill has been drawn providing for an unpaid Commission on Food Supply, whose duty it shall be to begin at least a study of the food supply of Massachusetts in all its various aspects.



All this procedure is most significant with respect to the purpose, work, and development of the College. It is frankly an enlargement of scope, but one wholly germane to the agricultural character of the institution. It will eventually mean a substantial increase in work and equipment. The food supply problem will doubtless call for prolonged research. Very soon will come a demand for trained specialists in marketing and other similar phases of the work. We will be required through our Extension Service to assist in reaching every home in the Commonwealth. In my judgment, all of our agricultural colleges will in time attempt to cover this entire field; at present we are the pioneers. I hope that the people of the Commonwealth, who are now undoubtedly becoming aroused to the significance of the food supply question and the need of educational work and especially of investigation with respect to it, will permit us to assist in its solution, as we can if we are given the facilities of equipment and staff.

EXPANSION IN EDUCATIONAL SCOPE OF THE COLLEGE. — When the Commission on Higher Education visited the College about a year ago, we laid before them three suggestions to which we hoped they would agree, as representing the relation of this institution to the system of higher education in the Commonwealth: (1) that nothing should be done now or later to restrict our work as a College of Agriculture; (2) that we should be definitely allowed to expand our work to include the whole field of food supply — production, conservation, market distribution, and food utilization — and with respect also to our full service in the three phases of work that we are obligated to perform, namely, investigation, the training of specialists, and extension teaching; (3) that if it seemed wise to utilize our equipment for service beyond these two fields, the courses to be developed should grow out of other applications of those natural and social sciences which we must have as a basis for agriculture, country life, and food supply. This statement we considered “official” in the sense that it pretty clearly represented faculty opinion, and we had reason to think also the views of your Board of Trustees.

In addition to these suggestions, various members of the faculty handed to the Commission memoranda expressive of individual views. Personally I have some convictions concerning this whole problem of higher education in the State, but doubt whether this report is the place for publishing them. Moreover, at this writing the report of the Commission has not been made public and I do not wish to anticipate that report. I feel, however, quite keenly that the time has come when our College should be allowed to broaden the scope of its work somewhat beyond the fields of agriculture, country life, and food supply, and on the principle enunciated in our suggestions to the Commission. I have arrived at this conclusion with much personal reluctance because, as you know, I have always maintained that this College should be nothing but an agricultural college. But I think it is evident that the State will be asked to provide increasing facilities in higher education, and whatever plan is followed in this development there is no avoiding the conclusion that the Massachusetts Agricultural College should be fully realized in that plan.

I should like to call attention to a sentence in the Morrill Act of 1862, which is virtually the charter of our College as it is of every other similar institution in the United States. That part of the Act which describes the purpose of the institution, is as follows:

“The leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.”

As a rule, that part of this statement of purpose usually emphasized is the first part, and seldom have we discussed the full meaning of the words “the education of the industrial classes in the several pursuits and professions of life”. But *the whole contention of the advocates of enlarged facilities in higher*

*education in Massachusetts today is based largely on the plea that the boys and girls from the homes of the industrial classes are not getting their chance.* Here is our charter, at our very hand, authorizing us to enlarge our scope, in order that the sons and daughters of the industrial classes of this great industrial Commonwealth may have a fuller chance for such higher education as they are capable of and for any occupation that they want to enter.

NEW COURSES. — I wish to recommend that steps be taken to secure whatever permission may be necessary from the legislature to enable us to start three new courses, if possible the coming autumn.

(1) *A Course in General Science.* — We have many students already with us, and there are many more high school students who do not come to us because we do not offer this course as yet, who are uncertain as to the particular occupation they would like to pursue, but who wish to secure a rather general education which will be largely composed of work in science, rather than in language and literature, and which will form an adequate foundation for the pursuit of vocations connected with the industries and business dominant in Massachusetts. We could easily formulate a general science course with subjects already offered. Any additional costs involved would for the present be almost wholly due to an increased number of students.

(2) *A Teachers' Course.* — We already have a strong department of agricultural education, which with the addition of possibly one or not to exceed two instructors, could care for some while for the pedagogical work necessary to train high school teachers of science, both men and women. There is a large field here which we have entered very slightly because of our previous emphasis upon the agricultural aspect of education. This course should also include the training of high school directors of athletics and physical education.

(3) *A Course in Home-making.* — Here again we have nearly all the material already at hand, though we should need soon two or possibly three more instructors, because thus far we have not been allowed to develop our home-economics work on a four-year basis. I should like to make it clear that we need not feel compelled to offer a highly specialized course in home-economics except as future demands may come, but rather a general course for women in which the home-making elements shall receive adequate attention. There is no reason why women should not continue to take work in agriculture and in science. Many will undoubtedly elect the proposed new courses in general science and for teachers; others, and I think the majority, will eventually wish to follow a specially organized course for women in which home-making will play a significant part.

All three of these proposed courses follow the principle already indicated, namely, that we would utilize existing offerings in the course of study and thus reduce added institutional costs to very slight terms. In other words, with a minimum increase in our "over-head" we can develop some very important opportunities for the youth of Massachusetts. It is true that if these new courses should attract students in large numbers the cost of maintaining the institution would increase, but there would be small increase due to the mere fact of multiplying courses. In no other way, so far as I can see, can the State so economically provide new opportunities for its youth along certain lines.

Moreover, these new courses are in harmony with what in my judgment should be the fundamental principle of our expansion, namely, the development and maintenance of the *liberalized occupational course* — a course that frankly prepares for occupation, and yet which recognizes that occupational preparation is by no means wholly a matter of technical knowledge, and cannot fairly exclude suitable training for citizenship and for individual mental and moral development. At first thought it may seem as if the proposed course in general science would not fall in with this principle; but I think this course should be very definitely foundation work for occupation, although the student need not specialize in any single occupation while following undergraduate studies.



## THE RELATION OF THE COLLEGE TO THE STATE ADMINISTRATION.

During the past year we have been in frequent contact with the new Commission on Administration and Finance. All of our requests have received consideration and the members of our staff have been given courteous personal treatment. We are not, however, reconciled to the essential unsoundness of the present scheme of centralized control of expenditures. Several decisions of the Commission this year have been particularly trying. Three bulletins of the Experiment Station have been refused publication. As you are aware, you have already authorized the preparation of a bill intended to exempt the State Experiment Station from the provisions of the law that gives the Commission on Administration and Finance control of publications. We have had also, in recent months, an unpleasant illustration of the way in which the Commission can control fundamental policies. A vacancy in the office of Nutrition Specialist in the Extension Service, which we asked to be filled early in September, has not been filled because the Commission at first questioned the policy of our continuing the work so long as the State Department of Health also had a nutrition worker. Our Nutrition Specialist was an office established a number of years ago, under a joint agreement with the United States Department of Agriculture and does work practically required under the Smith-Lever Act of Congress, which the legislature of this Commonwealth accepted. On general principles, furthermore, if there be real duplication of work, no administrative agency in the Commonwealth should be permitted to do educational work that in the very nature of the case belongs to the College. A further ruling of the Commission apparently indicated their willingness to allow the position to stand but materially reduced the salary. We appealed to the Governor and Council and the matter is still pending.

Now, Gentlemen of the Trustees, this sort of procedure simply cannot go on if you desire to maintain the morale of the staff and if you expect the institution to do its work economically and efficiently. I do not like to continue to protest against the present methods, as I have done every year since the system was established. Because of the fact that we are still maintaining our work and that we have lost comparatively few from our staff, it may seem to you that we are becoming reconciled to the law and the administrative rulings and that the issue is not serious. On the contrary, it is most serious. I cannot exaggerate its seriousness. I assure you that many of us who come into closest contact with these administrative relationships have reached nearly the limit of our endurance.

The essence of the reform we desire is that you as a Board of Trustees shall have your power of control of the College restored to you, that it shall be specifically recognized that neither the Commissioner of Education nor the Commission on Administration and Finance shall have more than advisory and recommendatory powers. We concede the value of the State Budget system, though in our judgment the number of classified items in our part of the Budget should be greatly reduced, if indeed the one item for the College may not suffice. We think the law should be changed to permit the Trustees to decide upon the extent to which members of the staff may travel outside of the State at State expense, and a law enacted which will permit the earnings of the institution to be at once reappropriated for its use. We believe that the Trustees should have full power to decide the scope of our work; the type of expenditures that are justifiable; to employ members of the staff and to fix their salaries. We believe that this power should be final and not subject to veto on the part of any of the other State officials.

There is no question but all these powers should be held by the Trustees subject to legislative authority and to such checks, accounting, and reviews as may be demanded by sound public policy.

## MASSACHUSETTS AGRICULTURAL COLLEGE LEGISLATIVE BUDGET 1924.

### Projects for Permanent Improvement.

#### 1. TUNNEL FOR STEAM LINE FROM POWER PLANT TO STOCKBRIDGE HALL, \$39,000.

The principal argument advanced in support of this project is the recommendation made by French and Hubbard, engineers, who recently made a study of the present heating plan and future development for the same, "that a tunnel be constructed to Flint Laboratory and Stockbridge Hall and the piping arranged so that exhaust-steam can be used in these buildings. We are firm believers in tunnels for steam mains of this kind, and believe that when it is necessary to rearrange the underground piping, tunnels should be constructed. We would recommend this both for economy in the long run and on account of convenience in repairs and pipe insulation."

At present none of the underground steam lines are enclosed in tunnels. The result is a high cost of maintenance because of the excessive radiation and because of the difficulty in locating and repairing leaks. Also, at present, the maximum use is not made of exhaust steam; this latter difficulty would be met by the project here outlined.

#### 2. HORTICULTURAL MANUFACTURES LABORATORY AND EQUIPMENT, \$60,000.

The importance of utilizing various by-products of the farm which formerly were wasted, such as fruit and vegetables, was emphasized during the war, and under the direction of Prof. W. W. Chenoweth of this institution farmers came to see whereby this saving could to advantage be made permanent. In order to give adequate instruction in the preservation of fruit and vegetable products, a new laboratory building is essential. The plans provide for a one-story building of inexpensive construction, which will furnish laboratories for the various phases of this work.

The pressing need for this building is now generally understood. However, some of the principal considerations may be recapitulated as follows:

(a) The department of horticultural manufactures now has its work widely distributed in four buildings, viz. Flint Laboratory, Wilder Hall, French Hall, and a workshop on the hill near the cold storage plant. This wide scattering of the work is obviously very detrimental to its objective.

(b) The principal teaching is done at Flint Laboratory in rooms which were designed for the use of the dairy department. The dairy department needs these rooms and would like to see the department of horticultural manufactures cared for elsewhere as soon as possible.

(c) The present quarters are entirely inadequate for the teaching work. On account of the limited space the department has been compelled to refuse admission to numbers of students. This is perhaps the only department in the institution which has been compelled frequently to refuse admission to students on account of lack of space. All the teaching could be much better organized and more efficiently conducted in a new building designed for this particular work.

(d) It is highly desirable that vigorous research work be undertaken at the earliest opportunity in the field of fruit and vegetable preservation and the manufacture of by-products. A strong demand exists for this work among fruit growers, but the subject is equally important to all consumers of food in Massachusetts.

(e) The department is now carrying on important extension work, but these extension projects need to be strongly supported by effective work at the college, and especially by well-directed research work.

(f) The Massachusetts Fruit Growers' Exchange Association, the Boston Market Gardeners' Association and other organizations have urgently requested this proposed building. This demand from the fruit growers and vegetable growers should be squarely met.



### 3. MISCELLANEOUS BUILDINGS AND IMPROVEMENTS IN ACCORDANCE WITH SCHEDULE BELOW, \$34,650.

(a) *Tobacco Barn, Brooks Farm, \$5,000.* — One of the experimental projects to which attention has recently been given is that of cultural problems of tobacco. A section of the farm is used for growing tobacco and a barn for drying tobacco is necessary.

(b) *Tillson Farm: House for Foreman, Shop and Storage, \$5,500.* — These additional improvements at the Tillson Farm are necessary to more adequately conduct the experimental work in Poultry Husbandry carried on there.

(c) *Buildings at the Farm: Calf Barn, Piggery, Storage and Granary, \$10,000.* — These minor buildings are requested in order to provide much needed facilities on the College Farm.

(d) *Head House for Agronomy Greenhouse, \$2,650.* — This appropriation is requested in order to supplement the laboratory facilities in connection with instruction in soils and crops.

(e) *Culvert over Brook in Ravine for Coal Storage, \$2,500.* — With the prospect of the winter coal supply for the College being delivered before the first of December, it is necessary that the space for storing coal be enlarged. By building a culvert over the brook, which runs near the present coal storage it will be possible to store the amount of coal necessary during the portion of the winter months.

(f) *Land for Cranberry Station at Wareham, \$1,000.* — This appropriation is requested for the purchase of about sixteen acres of land contiguous to the cranberry Station at East Wareham, for the purpose of providing an opportunity for an increase in experimental work with blueberries, for variety testing of cranberries, and other experimental work of a similar nature. A part of this sixteen acres is adjacent to a pond, and is a favorable site for the construction of a second experimental bog. Another part is well suited to the extension of the commercial blueberry work, while the remaining area is needed both for straightening the boundary of the present plant and to serve as a source of upland peat, sand, and fuel.

(g) *Storage for Winter Vegetables, \$3,000.* — In order to demonstrate the advantages to be derived from community storage for winter vegetables it is proposed to erect on the grounds of the college, a building which will not only store the vegetables produced at the college but also serve as a demonstration to communities interested in a similar project.

(h) *Fencing Fruit Plantation, \$3,000.* — Because of lack of funds, the fencing of the large fruit plantations owned by the college has been deferred. As a result, a good deal of fruit is stolen each year in spite of the fact that the orchards are protected by a watchman during the season when the fruit is ripening. The expenditure of the sum here indicated would seem to be justified on the grounds of economy.

(i) *Vault, Basement of Library, \$2,000.* — While it does not seem advisable to request at this time, any large appropriation for Library improvements or for the construction of a new building, it is important that a small fireproof vault be provided in the basement of the present building in which may be stored certain historical records and memorabilia of the College, many of which are of large value.

### 4. ADDITION TO RURAL ENGINEERING BUILDING, ONE UNIT, AND EQUIPMENT, \$17,500.

The demand for instruction in Rural Engineering has greatly increased during the past four years. The Two-Year students in particular elect this work in large numbers. In view of the fact that such a large proportion of the instruction is given in laboratories, it is essential that in the interest of economy as well as convenience larger laboratory facilities be provided. In the opinion of the head of the department, the present laboratory and shop should be double in size; the appropriation here indicated would provide for an increase of 50% in the floor space of the existing facilities. This additional space would be used for instruction in the care of motors, farm machinery, and in the making of concrete, and for the display of farm machinery and other equipment.

### 5. ROADS AND WALKS, \$10,000.

The College is responsible for the up-keep of approximately two miles of road running through its grounds, a road which is used constantly by the public. In 1923 approximately 1,700 feet of this road were rebuilt by an appropriation granted by the legislature of 1923 and under the supervision of the State Department of Public Works. An appropriation of \$2,500 has also been used for the rebuilding of a portion of the main walk at the entrance of the campus.

Prior to the outlay of 1923, practically no money has been spent for either roads or walks for many years. It is desirable that the main roads and walks be rebuilt as rapidly as possible. In order to make progress in the carrying out of this plan, an appropriation of \$10,000 is requested for 1924, for the extension of the work already appropriated in rebuilding the present roads and walks on the campus.

### 6. BUILDINGS FOR MARKET GARDEN FIELD STATION AT WALTHAM, \$25,000.

The trustees of the will of the late Cornelia Warren have deeded to the College about fifty acres of land located near the Clematis Brook railroad station in Waltham. This area is admirably suited for experimental work with vegetable crops. There are about twenty-three acres of level, uniform, well-drained, upland soil naturally much better adapted for experimental purposes than is the present area at North Lexington; and about fifteen acres of peaty, swamp deposit, typical in many respects of the area of wet land now being reclaimed in many different parts of the State, primarily as a health measure, but potentially of great importance to agriculture.

In addition, there is a farmhouse, which may be remodeled to serve as living quarters for the Field Station foreman, and likewise as administrative headquarters for the plant. There are a number of other smaller buildings, some of which can be utilized, others of which may have to be wrecked.

The opportunity for more thoroughgoing investigational and demonstrational work in vegetable growing is so apparent that the trustees of the college have gladly accepted this gift. The sum of \$25,000 is needed to cover the cost of the initial equipment at the new Field Station, in order that work may be started in the late fall of 1924. This appropriation is needed to erect a thief-proof wire fence around the plant, to care for the remodeling and moving of one of the smaller buildings now on the place to serve as service headquarters; to build a greenhouse range and heating plant; and to make preliminary repairs on the house and other buildings. In addition, small appropriations will later be needed to care for the draining of the swamp and to make other improvements.

It is expected that receipts from the sale of the North Lexington property will be approximately \$20,000. In effect, therefore, the initial cost to the State of the much larger plant at Waltham, a total of fifty acres as against twelve acres, with increased opportunity for effective work, will be approximately \$5,000.

KENYON L. BUTTERFIELD,  
*President.*

### ANNUAL REPORT OF THE ACTING DEAN FOR YEAR ENDING 1923.

The college year 1922-23 opened very auspiciously. The entering class numbering 187 was the largest since the war and from the standpoint of scholarship and general attitude proved to be one of the most satisfactory that ever entered the college.

Following our usual practice each new man was assigned to an adviser. The advisers are all teachers of Freshmen and are, therefore, fully acquainted with the courses which Freshmen carry and the requirements which have to be met. Whenever any scholastic report is made to the Dean's Office, the same is placed in the hands of the student by his adviser who in this way has an unusual opportunity to counsel and direct the individual student.

The chief value of the system lies in these personal contacts between broad, human, sympathetic members of the faculty and their advisees. The adviser



must command the respect and issue the invitation to friendly intercourse, but the student must accept these overtures and discuss his problems frankly.

The adviser is not a private tutor, nor an administrator with powers usually entrusted to the Dean; nor is he functioning in a system devised to save inferior or unworthy students from dismissal. But his main job is to help the new student to make, with the least possible jar, the transition from a life closely supervised to one that is pretty largely self-regulated. It is the duty of the college to render service at this point.

The members of the staff who assisted the Acting Dean in advisory work during the year were Professors Patterson, Skinner, Rand, Julian and Messrs. Thissell, Bogholt and Porter. Their efforts in behalf of the men assigned to them caused much favorable comment. They deserve especial credit in view of the fact that they were willing to take on these additional duties when they were already pretty well crowded by a heavy teaching schedule.

The scholarship record of the members of the three other classes was reviewed at regular intervals by the Acting Dean and personal conferences arranged in all cases where the work was not satisfactory. In general the scholarship situation showed a gratifying improvement. The number of conditioned and failed courses was less than we had for many years. Through the year about ten per cent of the new men were dropped because of failure in over forty per cent of their work. Considering the number of men involved and that some of these failed were admitted on probation, we have reason to feel that the record is a fairly creditable one.

For the first time in the history of the college, individual photographs were taken of all the Freshmen. These are used by the Dean, the Registrar, and the President and form a part of the permanent record of each student. Their value to administrative officers is almost indispensable and the practice will undoubtedly become a permanent one.

It is a pleasure to call attention to the fact that the year was almost entirely free from grave or threatening student disorders. The "periodic grouch" was conspicuous by its absence. In speaking of the general situation, President Butterfield referred to it in this way: "My feeling is that we have had an unusually good year; as I see it, the best since the war. There has been splendid leadership in the various student activities, a fine spirit of co-operation, a number of progressive measures suggested by the students themselves, and above all an atmosphere of community friendliness and co-operation that is highly gratifying. It occasionally happens that some time during a college year, it seems necessary for students to ventilate some 'grouch' or other, so far as I can recall, this year has been entirely free from anything of the sort."

This kind of spirit somehow grows and thrives when a group of loyal, well prepared and well intentioned students seek to profit by the direction and instruction of an equally loyal, well trained and sympathetic faculty. Surely every effort for good scholarship and satisfactory student conduct must concern itself with all those factors in college life which aim to make every student a contented student so far as possible.

Miss Grace Gallond, our chief clerk, in fact the only clerk we have had since last fall has proved her worth in many ways. She is capable, tactful, and handles the innumerable details connected with absences, appointments and records in a highly acceptable manner. Her fair and straightforward dealing with students has made a good impression. Some way ought to be found to relieve her of some of the minor duties which crowd in on the more important work that would more than comfortably fill her day.

Several modifications of absences' regulations were tried out with good success. Plans have been drawn up and approved for withdrawing the cut privilege from Freshmen. This will go into effect with the class of 1927. We feel very sure that with our present organization and teaching methods, a student loses a great deal if his attendance is irregular. Then, too, it is evident that practically every student enters upon his college work in a rather serious frame of mind. He really wants to succeed. The college does well to make capital of this fact to help him in forming correct habits when he is beginning self-discipline through responsibility.

As to needs, first and foremost come dormitories. We at least should have facilities to house the Freshmen. A great deal of our work could be made more effective if we were able to reach our men more easily. With students scattered all over town in private homes, it is manifestly often impossible for us, under even the best supervisory organization, to learn of discouragements, associations, and conditions early enough to make our remedial work really effective. Any one knows how much clean, handy, and well adapted rooming places contribute towards making a contented student. We hope these dormitories will be provided in the near future.

During the year representatives of the Student Senate, the Inter-Fraternity Council and Adelpia met with the Scholarship Committee for the purpose of working out plans which would help the scholarship of the college generally. Considerable progress was made and some of the recommendations made at the joint meetings have already been put into effect. This co-operative endeavor will undoubtedly bring good results.

WILLIAM L. MACHMER,  
*Acting Dean.*

### REPORT OF THE DIRECTOR OF THE GRADUATE SCHOOL.

It is with much satisfaction that I have the privilege of reporting the steady and progressive increase in the effectiveness of the Graduate School. This is due to the wholesome and strengthening influences prevailing in the departments offering graduate work.

What is done and can be done for the development of advanced study in agriculture, whether it be from the scientific approach or in its so-called practical bearings, rests with the growth of the specific fields of activity within agriculture and a free understanding of the significance of each in its relation to the whole. I believe that those who have the direction of graduate work in any of its forms have this grasp of the situation.

Much consideration has been given to the liberalization of graduate study during previous years with the result that some experiments have been tried and others are in progress. This seems to be a subject receiving some thought in all graduate schools. Linked with it is the character of undergraduate preparation which may be seemingly of any nature. This situation throws into the graduate schools preparatory study for the pursuance of advanced study. No two individuals have had exactly the same preparation, accordingly each individual requires specific adjustment. Liberalization, undergraduate preparation, and graduate study of an effective kind go hand in hand in mapping out a course of action although graduate study is very different from our present system of undergraduate study.

CHARLES E. MARSHALL,  
*Director of the Graduate School.*

### REPORT OF THE DIRECTOR OF SHORT COURSES.

#### New Courses.

During the past year several new short courses were offered. A series of four, two-weeks courses for experienced dairymen, managers of ice cream plants, milk producers and others were given with marked success by the Dairy Department. The attendance was very satisfactory and the comments made on the course favorable. These short courses differed, in that the student devoted all of his time to practically one subject. The Division of Horticulture inaugurated a ten weeks course in general horticulture for experienced nurserymen. This course was given in co-operation with the New England Nurserymen's Association, the Massachusetts Nurserymen's Association and the Connecticut Nurserymen's Association. Though the attendance in this course was not large, it proved very satisfactory both to the staff and to the student body.

No short courses were discontinued during the past. The work of rehabilitation of disabled veterans of the world war is practically now complete. In the fall of 1923 there were but two federal trainees entering the freshman two-year class.

## Supervision of Farm Projects.

At the special request of the Veterans Bureau, the Massachusetts Agricultural College undertook the supervision of farm projects carried on by federal trainees under the authority of the Veterans Bureau. These trainees are usually veterans who have pursued courses in agriculture in this or other colleges and who have now undertaken to put to practical application the knowledge so gained. Three men are employed in the work of supervision for the Veterans Bureau. Mr. George Goodridge, a graduate of this college in the class of 1918. Mr. F. L. Hannaford, formerly employed by the District Office of the Veterans Bureau in Boston. Mr. H. F. Williamson, formerly employed by the State Institute of Applied Agriculture in Long Island. In making provision for advising and counseling with men who have completed their training and who are about to engage in practical work, the Federal Government has taken one of the most forward steps in recent years in agricultural education. Students who have completed a short course of instruction in agriculture and who wish to engage in farming face two problems, credit and expert guidance. Sometime, somewhere provision will have to be made for capitalizing the honesty of ambitious young men who wish to take up farming, and of providing for them such expert supervision as will help insure their chance of success.

### Attendance in Courses.

The attendance in all short courses is less than in previous years. Recently obtained figures indicate that this condition is not local but that there has been a sharp falling off in registration in agriculture in many of the agricultural colleges due to the agricultural depression and to the high wages now being paid in other industries.

### Supervision of Placement Training.

The supervision of farm placement training has been carried on very efficiently by Paul W. Viets, Supervisor. It is very likely that by next year we shall have to have an assistant to Mr. Viets in this work.

The following tables are included showing enrollment in the Two-Year Course:

#### A. *Total Yearly Enrollment of Each Year based on Enrollment from September to June.*

	1918.	1919.	1920.	1921.	1922.
Two-Year Course . . . . .	37	209	295	302	274
Ten Weeks' Winter School . . . . .	91	63	112	83	84
Summer School . . . . .	68	238 <sup>1</sup>	322 <sup>1</sup>	353	127
School for Country Clergymen . . . . .	—	—	—	19	34
Vocational Poultry Course . . . . .	5	13	19	26	4

<sup>1</sup> Includes students sent by Federal Board for vocational education.

#### B. *Age Distribution of Two-Year Students based on Total Enrollment from September to June.*

AGE (YEARS).	1920-21.		1921-22.		1922-23.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
16 . . . . .	—	—	—	—	—	—
17 . . . . .	21	7.1	16	5.3	12	4.4
18 . . . . .	34	11.5	26	8.6	20	7.3
19 . . . . .	35	11.9	44	14.6	45	16.4
20 . . . . .	38	12.8	41	13.6	44	16.1
21 . . . . .	27	9.2	25	8.3	26	9.5
22 . . . . .	26	8.9	18	5.9	19	6.9
23 . . . . .	21	7.1	18	5.9	15	5.5
24 . . . . .	16	5.4	15	5.0	13	4.7
25 and over . . . . .	77	26.1	99	32.8	80	29.2
Total . . . . .	295	100.00	302	100.00	274	100.00

JOHN PHELAN,  
Director of Short Courses.



## REPORT OF THE DIRECTOR OF THE EXPERIMENT STATION.

The year just past has in general been one of progress. There were no resignations of men holding key positions, and few changes in other positions. The appropriations made by the Legislature of 1923 made possible the strengthening of work in at least three departments, and while rigid economy has been practiced as a matter of general policy, yet amounts available for maintenance were sufficient to give a fair degree of elasticity to the work of most of the departments. The character of the season was such that the producing departments were able to complete their season's program at less than expected cost. In all these respects, therefore, my report is entirely favorable.

Aside from inability to match development of our men by corresponding increases in salaries, the only present serious difficulty in the Station organization has to do with publication of the results of research. Financially this is a small matter, as less than 2 per cent of this entire research budget of the Station is expended in publication. Its present importance lies in the fact that under provisions of State Law all manuscripts submitted for publication at State expense must be approved by the Commissioner of Administration and Finance. This in effect gives to the Commissioner editorial supervision over research publications, something which was probably not contemplated when the law was passed.

During the past year approval on three manuscripts submitted for publication was refused. Decision on several others was withheld over a period of weeks, and in one case months. Requests for information as to the status of these manuscripts have not been answered. As a result the publication program of the year has been wrecked. At the present time the Station Director is unable to give any assurance to members of the staff regarding the possibility of publishing results of completed work. He is not able to so time publications as to make them most timely and most serviceable. Effective co-operation with other agricultural experiment stations and with the United States Department of Agriculture is made exceedingly difficult.

Consideration of the above problems calls attention to the fact that very few people have any adequate understanding of the various ways in which agricultural research work is capitalized. The thought most commonly expressed is that the work is primarily addressed to farmers, and to farmers alone. It is therefore worth while to point out some of the ways in which experiment station work in general, and the work of the Massachusetts Station in particular, is capitalized, and the ways in which it finally brings returns to the people of the State.

A part of the work of the Experiment Station results in immediate possibility of improved farm practice. In such cases the report of the work is and should be rendered directly to farmers. The work of the Department of Botany in studying apple scab control, as carried on in the eastern part of the State; much of the work of the Cranberry Station; and that work of the Department of Agriculture which had to do with the use of fertilizers, find a place in this classification.

In other cases agricultural research affects farmers indirectly, through the medium of products sold for use on the farm. A recent case is that work of the Department of Pomology which resulted finally in the development of a nursery certification plan. Through certification it is now possible to avoid those losses which formerly occurred through the use of misnamed nursery stock. In order that the foundation research work might be fully capitalized, it was necessary on the one hand to show to orchardists the value of certified nursery stock; and on the other hand to demonstrate that the production of such stock would probably be profitable to nurserymen. In this particular case the final report of the research was published with both the farm and the nursery audiences in mind.

The work of the Department of Plant and Animal Chemistry, extending over a period of many years, illustrates a still more complex situation. This department has carried on more investigations in the study of digestibility of cattle feeds than has any other organization. To a limited extent the work is used



directly by farmers, and to them are addressed some of the reports of our research work. A much wider field is ultimately covered, however, in that the results of these studies are incorporated in nearly all standard texts on the feeding of farm animals. Finally, this work has been studied by the manufacturers of commercial feeds, and utilized in a very large way. A commercial industry, therefore, serves as an intermediary between the Station and those farmers who buy the products of this industry.

In other cases, it may be, research work is primarily of value in giving a basis for regulative work on the part of the State or Nation. In this classification comes the comprehensive study of bacillary white diarrhoea of poultry as made by our Department of Veterinary Science. Only through the organization of regulatory work on a comprehensive basis could this work be capitalized so as to be of value to poultry keepers, and through them to the consumers of poultry products. Already, as a result of this basic work, Massachusetts has a most efficient working plan for controlling and eliminating this destructive disease. Other states, through means of the published record of this investigation, are following the lead. The published report of the experiment was addressed to scientific workers alone, particularly those laboring in the field of avian pathology—yet poultry farmers in this and other states are now benefiting immensely.

Finally, it must be recognized that many problems undertaken by the Experiment Station may have subsidiary by-products which are of service to agricultural science even though they may be of no concrete immediate value to agriculture. A fact once established must be published in order that it may be made a matter of easily accessible record. Failure to publish means that the work must be done over again by some other person in some other place, with a probable net loss to the agriculture of the country because of the facts not being fully recorded. Particularly is this the case in the developing study of the economics of the food supply of the State. Not until methods of study become standardized and much preliminary work is done, will it be possible to insure that all efforts along research lines be fully productive. The State, however, expects to learn from the experience of other states. In its turn, other states must be given opportunity to learn from the experience of Massachusetts.

One of the most pressing needs of the Station is a definite publication policy which will insure that all the work of the Station be productively and consistently recorded.

SIDNEY B. HASKELL,  
*Director of the Experiment Station.*

## REPORT OF THE DIRECTOR OF THE EXTENSION SERVICE.

At the close of the State fiscal year ending November 30, 1923 I am able to report excellent progress in extension accomplishments, but I feel obliged to report great discouragement concerning prospects.

Accomplishments include the carrying forward of our projects on the general lines planned at the beginning of the year. The wage-competition of industry, particularly contract construction work, has been more keen and more disastrous to agriculture than at any time during the war. More farmers have yielded, and given up agriculture for other occupations than at any other time. On the other hand those farmers who have reorganized their business to meet present opportunities have had a good year. The industrial pressure has hastened the transition from the former type of general agriculture to the newer specialized type. The change was due to come anyway; it only comes more suddenly and violently.

It is more evident than ever that certain types of agriculture, such as sheep raising and hog raising on purchased feeds, are of the past. Certain other lines, as fruit growing and poultry raising, can expand very greatly before market demands are met. Others, as market gardening, can hold their own and make some increase as population increases. Still others, as tobacco growing, onion growing, and cranberry growing, are subject to limitation of soil, disease and

pest rather than to total market requirements and can make substantial growth if these limitations are met.

The year has shown that organizations of farmers on commodity lines can do a great deal to assist in securing adoption of sound practices. We have therefore capitalized such organizations in every possible way, and have endeavored to strengthen their usefulness as much as possible.

Home economics work has developed on a more sound and fundamental basis than ever before, with stress on leader-training. Subject matter is in a better state of development. County home demonstration agents have become heartily convinced of the value of group leader-training. Women have done more effective work as group leaders than ever before.

Work of boys and girls clubs in agriculture and home economics has included more older boys and girls. Numbers show some increase, but numbers are less an index of value than are nature and quality of work done. These have improved.

County budgets have been remarkably sustained in view of the present wave of economy. County staffs have shown but little change.

On the discouraging side of the scale is the ever-increasing difficulty of getting the necessary things done without spending a very considerable part of the time in overcoming objections and obstacles. Entire projects have been imperilled, with the prospect of losing the fruits of years of foundation work, because of failure to allow the means of continuance, even though the funds are in hand. Our nutrition project, commenced in 1913, is at present writing still under discussion in the State House, and months have lapsed during which the county home demonstration agents have no subject-matter leadership. The results of years of work in farm accounting are similarly threatened by failure to allow the publication of necessary account books except under wholly impractical conditions. Our printing program is months behind requirements, owing to difficulties of various sorts. Approval cannot be had of publications for which we are convinced that there is a need; and we are therefore obliged to spend more money than the publication itself would cost in answering questions by mimeograph material or personal correspondence. Failure to receive bills from Wright & Potter between March 1 and November 26 made it impossible for us to have any accurate idea of our commitments. Extreme delays in approval of manuscript give the impression of desire to reduce printing by causing discouragement, and to save money by delaying until the need is over, or by passing the matter into the next year's budget. Our staff do not have heart to write under these handicaps. Refusal in important cases of permission to travel out of state is a still further and most serious discouragement to our people. Our people have worked long hours overtime under conditions of personal discomfort and even of personal cost in order to accomplish their work. When they find themselves further handicapped and penalized by seemingly needless obstructions they are first grieved, then puzzled, and finally ask in disgust "What's the use?" Our standards will be lowered, and the record of our work diminished, if we even approximate the time-serving attitude which comes when the day is standardized, and when it is the habit to leave at closing time regardless of whether work is completed, or not.

During the year three vacancies have occurred by resignation. Mr. A. F. MacDougall resigned as Extension Professor of Farm Management to take up the management of the Middlesex County Extension Service. Mr. Louis M. Lyons resigned as extension editor to become city editor of the Springfield Republican. Lucy M. Queal resigned as nutrition specialist to pursue graduate work in Columbia University.

A full report of the year's work will be ready about January 1, 1924, when statistics are completed.

JOHN D. WILLARD,  
*Director.*

TABLE I. — *New Appointments.**A. In the Academic Departments.*

- Assistant Professor of Beekeeping: Morton H. Cassidy, B.Sc., Massachusetts Agricultural College, 1920.
- Instructor in Pomology: Arthur P. French, B.Sc. Ohio State University, 1921; M.Sc., Massachusetts Agricultural College, 1923.
- Professor of Agricultural Education: Harry N. Glick, A.B. Bridgewater College, 1913; A.M., Northwestern University, 1914.
- Instructor in Physical Education: Howard R. Gordon, B.Sc., Massachusetts Agricultural College, 1923.
- Assistant Professor of Floriculture: Richard T. Muller, B.Sc., Cornell, 1916 M.Sc., Univ. of Maine, 1920.
- Instructor in Poultry Husbandry: Marion C. Pulley, B.Sc., Massachusetts Agricultural College, 1919.
- Instructor in Pomology: George J. Raleigh, B.Sc., Kansas State College, 1922; M.Sc., University of Nebraska.
- Instructor in Farm Law: Harold W. Smart, LL.B. Boston University, 1918.
- Instructor in Agricultural Economics: Hubert W. Yount, B.Sc. Ohio State University, 1921; M.Sc., Massachusetts Agricultural College, 1923.

*B. In the Experiment Station.*

- Investigator in Pomology: John S. Bailey, B.Sc., Michigan Agricultural College, 1922; M.Sc., Iowa State College, 1923.
- Assistant Research Professor of Botany: William L. Doran, B.Sc., Massachusetts Agricultural College, 1915; M.Sc., 1917.
- Assistant Research Professor of Agronomy: John P. Jones, B.Sc., University of Maryland, 1918; M.Sc., University of Maryland, 1921.
- Investigator in Agriculture: Donald S. Lacroix, B.Sc., Massachusetts Agricultural College, 1922.
- Laboratory Assistant: Gustaf E. R. Lindskog, B.Sc., Massachusetts Agricultural College, 1923.
- Assistant Research Professor of Vegetable Gardening: Victor A. Tiedjens, B.Sc., University of Wisconsin, 1921; M.Sc., 1922.
- Laboratory Assistant in Pomology: Harold E. Wilson.

*C. In the Control Service.*

- Analyst Control Service: Sylvester J. Broderick, B.Sc., New Hampshire State College, 1922.
- Laboratory Assistant in Poultry Disease Elimination: Hazel M. Parker.

*D. In the Extension Service.*

- Extension Assistant Professor of Pomology: Frederick E. Cole, Jr., B.Sc., Massachusetts Agricultural College, 1920.

*E. Miscellaneous.*

- Resident Nurse: Avis P. Christopher
- Matron, Infirmary: Mrs. Florence Thomas

TABLE II. — *Speakers for the Year.**A. Speakers at Assembly for the Year ending Nov. 30, 1923.***1922**

- Dec. 7. President L. H. Murlin, Boston
- Dec. 14. Dr. Edward H. Hume, China

**1923**

- Jan. 3. Mr. Ralph W. Redman, M. A. C.
- Jan. 10. Mr. Norman Thomas, New York City
- Jan. 17. Mr. Walter R. Clarke, Milton, N. Y.
- Jan. 24. Dr. J. E. Williams, New York City
- Jan. 31. President Mary E. Woolley, South Hadley



- Feb. 7. Mr. Arne Kildal, Washington, D. C.
- Feb. 14. Student Forum
- Feb. 21. Dr. J. S. Ferguson, New York City
- Feb. 28. Capt. George A. Parker, Boston
- Mar. 7. Freshmen — Sophomore Debate
- Mar. 14. Rev. J. Franklin Knotts, Northampton
- Mar. 28. Mr. Malcolm W. Davis, New York City
- Apr. 4. Dean Edward M. Lewis, M. A. C.
- Apr. 11. Dr. C. D. Woods, Boston
- Apr. 18. Hon. John M. Gibbs, Waltham
- Apr. 25. Student Forum
- May 2. Burnham Declamation Contest
- May 16. Dr. Robert O. Blood, Concord, N. H.
- May 23. Prof. William L. Machmer, M. A. C.
- Sept. 26. President Kenyon L. Butterfield
- Oct. 11. Prof. Frank A. Waugh, M. A. C.
- Oct. 18. Dr. William E. Barton, Chicago, Ill.
- Oct. 25. Judge Michael H. Sullivan, Boston
- Nov. 1. Mr. George H. Campbell, Baltimore, Md.
- Nov. 8. Student Forum
- Nov. 15. Mrs. Lucia Ames Mead, Boston
- Nov. 22. Mr. Samuel G. Inman, New York City

*B. Speakers at Sunday Chapel for Year ending Nov. 30, 1923.*

**1922**

- Dec. 10. Rev. John Haynes Holmes, New York City
- Dec. 17. Bishop Logan A. Roots, Hankow, China

**1923**

- Jan. 7. Bishop Edwin H. Hughes, Malden
- Jan. 14. Dean Charles R. Brown, New Haven, Conn.
- Jan. 21. Rev. Vaughan Dabney, Dorchester
- Jan. 28. Mr. Alfred E. Stearns, Andover
- Feb. 4. Rev. Moses R. Lovell, Durham, N. H.
- Feb. 11. Rev. Robert W. Coe, Norwood
- Feb. 18. Dean James A. Beebe, Boston
- Feb. 25. Dr. Frank W. Sheldon, Boston
- Mar. 4. Dr. W. E. Gilroy, Boston
- Mar. 11. Judge Michael J. Murray, Boston
- Mar. 18. Dr. Nehemiah Boynton, New York City
- Apr. 1. Rev. John B. Hanna, M. A. C.
- Apr. 8. Rev. Edwin B. Robinson, Holyoke
- Apr. 15. Rev. Kenneth C. MacArthur, Cambridge
- Apr. 22. Rev. James G. Gilkey, Springfield
- Apr. 29. Hon. P. Whitwell Wilson, New York City and London
- Sept. 30. President Kenyon L. Butterfield
- Nov. 4. Bishop Francis J. McConnell, Pittsburgh, Penn.
- Nov. 11. Dr. Albert Parker Fitch, New York City
- Nov. 18. Rev. John A. Ryan, D.D., Washington, D. C.
- Nov. 25. Rev. James G. Gilkey, Springfield



TABLE III. — Attendance.

	REGISTRATION NOV. 1, 1922.			REGISTRATION NOV. 1, 1923.		
	Men.	Women.	Total.	Men.	Women.	Total.
<i>A. In Work of College Grade.</i>						
Graduate Students . . . . .	48	6	54	58	5	63
Senior Class . . . . .	84	7	91	87	7	94
Junior Class . . . . .	89	6	95	71	4	75
Sophomore Class . . . . .	91	6	97	120	17	137
Freshman Class . . . . .	167	20	187	112	13	125
Special Students . . . . .	9	4	13	10	7	17
Totals . . . . .	488	49	537	458	53	511
<i>B. Short Course Enrollment.</i>						
Two-Year Course, second year . . . . .	116	5	121	84	5	89
Two-Year Course, first year . . . . .	128	8	136	68	12	80
Vocational Poultry Course . . . . .	8	1	9	4	—	4
Totals . . . . .	252	14	266	156	17	173
<i>C. Other Short Course Enrollment.</i>						
School for Country Clergymen . . . . .	31	2	33	32	2	34
Winter School . . . . .	77	20	97	68	16	84
Summer School . . . . .	23	147	170	17	110	127
School of Rural Home Life . . . . .	—	16	16	—	—	—
School for Florists . . . . .	—	—	—	7	4	11
Totals . . . . .	131	185	316	156	132	256

<i>D. Convention Registration.</i>			1922.	1923.
Polish farmers' day . . . . .			125	100
Farmers' week and annual poultry convention . . . . .			2,000	2,500
Junior boys' and girls' prize winners' camp . . . . .			100	75
One-day campers (boys and girls) . . . . .			70	—
Extension workers conference . . . . .			80	80
Sheep breeders' conference . . . . .			100	75
Tri-State Conference on Fruit Growing . . . . .			150	100
Middlesex County Club Champions . . . . .			—	200
Hampden County Club Members . . . . .			—	200
Totals . . . . .			2,625	3,330

TABLE IV. — Legislative Budget, 1923.

ITEMS.	Requested, 1923.	Appro- priated. 1923.
Chemistry laboratory and equipment . . . . .	\$150,000	\$150,000
Improvements at power plant . . . . .	39,250	—
Improvements at Tillson Farm . . . . .	5,000	5,000
Laboratory, horticultural manufactures . . . . .	38,000	—
Development of market garden field station, Waltham . . . . .	25,000	—
Women's gymnasium . . . . .	15,000	—
Addition to rural engineering shops and equipment . . . . .	15,000	—
Roads . . . . .	8,000	8,000
Tool sheds and garage, Division of Horticulture . . . . .	6,000	6,000
Live Stock Replacement . . . . .	5,000	5,000
Calf Barn . . . . .	5,000	—
Superintendent's cottage, Tillson Farm . . . . .	5,000	—
Fencing fruit plantations . . . . .	3,000	—
New Walks . . . . .	2,500	2,500
Grading and draining addition to athletic field . . . . .	2,500	—
Land for cranberry station, East Wareham . . . . .	1,000	—
Farm house to replace fire loss . . . . .	—	8,000
Totals . . . . .	\$325,250	\$184,500

TABLE V. — *Current Account, State Funds.*

	Requested 1923.	Appropriated 1923.	Deficiency Appropriation.	Expended 1923.	Balance.
Personal Services:					
Administration . . . . .	\$37,850	\$37,600	—	\$36,910 97	\$689 03
Instruction . . . . .	198,680	192,000	—	191,012 12	987 88
General Maintenance . . . . .	122,500	118,000	\$49 30	119,451 58	—1,402 28
Experiment Station . . . . .	72,420	66,750	13 10	62,777 87	3,985 23
Extension Service . . . . .	52,180	50,000	—	50,098 03	—98 03
Market Garden Field Station . . . . .	6,000	6,000	—	5,480 94	1,519 06
Market Garden Field Station spl. . . . .	—	1,000	—	—	—
Short Courses . . . . .	53,227	52,600	—	50,763 47	1,836 53
Travel, Office and other exp. . . . .	48,695	42,500	852 85	42,898 58	454 27
Teaching, lab. sup. and equip. . . . .	55,000	55,000	2,503 62	58,230 93	—727 31
Experiment Station sup. equip. and publications . . . . .	16,000	14,000	259 31	16,572 04	—2,312 73
Experiment Station travel and office expenses . . . . .	4,000	4,000	46 48	3,830 04	216 44
Extension Service supplies, equipment, travel, etc. . . . .	40,000	35,000	146 11	29,920 83	5,225 28
Short Courses . . . . .	12,000	12,000	77 69	11,144 02	933 67
Heat, Light and Power . . . . .	72,000	72,000	583 48	87,464 27	5,119 21
Heat, Light and Power special Farm and Grounds . . . . .	—	20,000	—	—	—
Repairs, Ordinary . . . . .	20,000	20,000	315 43	21,090 86	—775 43
Replacements . . . . .	25,000	25,000	234 60	33,488 27	—8,253 67
Market Garden Field Station . . . . .	40,000	37,500	1,330 75	38,866 66	—35 91
Fertilizer Law Control . . . . .	4,000	3,200	139 08	3,780 12	—441 04
Poultry Disease Law . . . . .	14,500	13,500	9 17	13,325 10	184 07
Milk Testing Inspection Law . . . . .	7,000	7,500	16 95	7,621 10	—104 15
Trustees' Expenses . . . . .	600	600	—	544 15	55 85
Printing Reports . . . . .	1,200	1,200	169 17	1,404 61	—35 44
Commercial Feedstuffs . . . . .	2,000	2,000	—	1,744 94	255 06
	9,000	9,000	—	8,459 64	540 36
	\$913,852	\$897,950	\$6,747 09	\$896,881 14	\$7,815 85

TABLE VI. — *Statistics of Freshmen entering Massachusetts Agricultural College September 1923.*

A. *Home Addresses of Students (classified by Towns and Cities).*

Abington . . . . .	2	Greenfield . . . . .	2	QUINCY . . . . .	1
Acton . . . . .	1	Hadley . . . . .	3	Rockland . . . . .	1
Amesbury . . . . .	1	Hatfield . . . . .	1	Russia . . . . .	1
Amherst . . . . .	9	Hingham . . . . .	1	Sharon . . . . .	1
Arlington . . . . .	1	HOLYOKE . . . . .	7	Sherborn . . . . .	1
Ashby . . . . .	1	Hubbardston . . . . .	1	Southbridge . . . . .	1
Barnstable . . . . .	1	Hudson . . . . .	1	Southwick . . . . .	1
Becket . . . . .	1	Leverett . . . . .	1	SPRINGFIELD . . . . .	5
Belmont . . . . .	1	Lexington . . . . .	1	Stoneham . . . . .	2
BEVERLY . . . . .	1	MALDEN . . . . .	3	Stoughton . . . . .	1
Billerica . . . . .	1	Manchester . . . . .	1	Sutton . . . . .	1
Boston . . . . .	7	MARLBOROUGH . . . . .	1	Templeton . . . . .	1
Brookfield . . . . .	1	MEDFORD . . . . .	2	Tisbury . . . . .	1
CAMBRIDGE . . . . .	1	Medway . . . . .	1	Wakefield . . . . .	1
Canaan, Conn. . . . .	1	MINNEAPOLIS, Minn. . . . .	2	WALTHAM . . . . .	2
Charlton . . . . .	1	Montague . . . . .	2	Westborough . . . . .	1
CHELSEA . . . . .	1	Natick . . . . .	3	West Bridgewater . . . . .	1
Clinton . . . . .	1	NEW BEDFORD . . . . .	1	WESTFIELD . . . . .	1
Deerfield . . . . .	1	NEW LONDON, Conn . . . . .	1	West Springfield . . . . .	2
Dracut . . . . .	1	NEWTON . . . . .	1	West Stockbridge . . . . .	1
Duxbury . . . . .	1	NORTH ADAMS . . . . .	1	Wilbraham . . . . .	1
East Bridgewater . . . . .	1	NORTHAMPTON . . . . .	1	Williamsburg . . . . .	2
Easthampton . . . . .	2	Northbridge . . . . .	1	Wilmington . . . . .	2
Easton . . . . .	1	North Brookfield . . . . .	1	Winchester . . . . .	1
Enfield . . . . .	1	Northfield . . . . .	2	WOBURN . . . . .	1
EVERETT . . . . .	1	PITTSFIELD . . . . .	2	WORCESTER . . . . .	1
Fair Haven, Vt. . . . .	1	Plymouth . . . . .	1	Wrentham . . . . .	1
FALL RIVER . . . . .	1	PORTLAND, Maine . . . . .	1		

B. *Home Addresses (classified by States and Countries).*

Connecticut . . . . .	Number. 2	Per Cent. 1.60	Russia . . . . .	Number. 1	Per Cent. .80
Maine . . . . .	1	.80	Vermont . . . . .	1	.80
Massachusetts . . . . .	119	95.20			
Minnesota . . . . .	1	.80		125	100.00

C. Home Addresses (classified by Counties of Massachusetts).

	Number.	Per Cent.		Number.	Per Cent.
Barnstable . . . . .	1	.84	Middlesex . . . . .	30	25.21
Berkshire . . . . .	5	4.20	Norfolk . . . . .	5	4.20
Bristol . . . . .	3	2.52	Plymouth . . . . .	8	6.72
Dukes . . . . .	1	.84	Suffolk . . . . .	8	6.72
Essex . . . . .	3	2.52	Worcester . . . . .	11	9.24
Franklin . . . . .	8	6.72			
Hampden . . . . .	17	14.27		119	99.97
Hampshire . . . . .	19	15.97			

D. Nativity of Parents.

	Number.	Per Cent.
Neither parent foreign born . . . . .	78	62.40
Both parents foreign born . . . . .	27	21.60
Father (only) foreign born . . . . .	10	8.00
Mother (only) foreign born . . . . .	10	8.00
	125	100.00

E. Education of Father.

	Number.	Per Cent.
Common school . . . . .	55	44.00
High School . . . . .	36	28.80
Business School . . . . .	6	4.80
College or University . . . . .	22	17.60
No statistics . . . . .	6	4.80
	125	100.00

F. Religious Census.

	MEMBERSHIP.		PREFERENCE.		TOTALS.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Baptist . . . . .	8	6.4	1	.8	9	7.2
Catholic . . . . .	24	19.2	—	—	24	19.2
Congregationalist . . . . .	31	24.8	13	10.4	44	35.2
Episcopal . . . . .	5	4.0	—	—	5	4.0
Methodist . . . . .	10	8.0	4	3.2	14	11.2
Presbyterian . . . . .	1	.8	—	—	1	.8
Unitarian . . . . .	9	7.2	4	3.2	13	10.4
Universalist . . . . .	—	—	2	1.6	2	1.6
Miscellaneous . . . . .	8	6.4	3	2.4	11	8.8
No statistics . . . . .	—	—	2	1.6	2	1.6
	96	76.8	29	23.2	125	100.0

*G. Occupation of Father.*

	Number.	Per Cent.
Agriculture and horticulture . . . . .	34	27.20
Artisans . . . . .	38	30.40
Business . . . . .	18	14.40
Deceased or no statistics . . . . .	9	7.20
Miscellaneous . . . . .	16	12.80
Professional . . . . .	10	8.00
	125	100.00

*H. Intended Vocation of Student.*

Agriculture or horticulture (practical) . . . . .	41	32.80
Agriculture or horticulture (professional) . . . . .	40	32.00
Professions . . . . .	14	11.20
Miscellaneous . . . . .	18	14.40
Undecided or no statistics . . . . .	12	9.60
	125	100.00

*I. Farm Experience.*

Brought up on a farm . . . . .	41	32.80
Not brought up on a farm and having no or practically no farm experience . . . . .	32	25.60
Not brought up on a farm, but having had some farm experience . . . . .	52	41.60
	125	100.00

*J. Miscellaneous Statistics.*

Average Age (years) . . . . .	18.90
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**REPORT OF THE TREASURER****For the Fiscal Year ending Nov. 30, 1923.****BALANCE SHEET.**

	DR.	CR.
<b>1922</b>		
Dec. 1. To balance on hand . . . . .	\$37,379 40	
<b>1923</b>		
Nov. 30. To departmental income . . . . .	151,288 70	
Nov. 30. To receipts from State Treasurer . . . . .	950,582 97	
Nov. 30. To refunds to State Treasurer . . . . .	196 41	
Nov. 30. To receipts from United States Treasurer . . . . .	111,719 54	
Nov. 30. To November and October schedule in transit . . . . .	113,316 40	
Nov. 30. Refunds transferred to State Treasurer . . . . .		\$196 41
Nov. 30. Expenditures for fiscal year . . . . .		1,175,602 23
Nov. 30. Income transferred to State Treasurer . . . . .		151,288 70
Nov. 30. Balance on hand . . . . .		37,396 08
	<b>\$1,364,483 42</b>	<b>\$1,364,483 42</b>



**STATEMENT OF LEGISLATIVE APPORTIONMENT AND EXPENDITURES FOR FISCAL  
YEAR ENDING NOVEMBER 30, 1923, AND APPORTIONMENT REQUESTED FOR  
1924.**

	Apportionment for Last Fiscal Year.		Expenditures.		Requested Appor- tionment for New Fiscal Year.	
College:						
Personal services . . . .	\$347,649 30		\$347,374 67		\$370,704 00	
Maintenance . . . . .	238,989 98		243,172 91		213,375 00	
		\$586,639 28		\$590,547 58		\$584,079 00
Experiment Station:						
Personal services . . . .	\$66,750 00		\$62,777 87		\$87,935 00	
Maintenance . . . . .	18,305 79		20,402 08		22,050 00	
		85,055 79		83,179 95		109,985 00
Extension Service:						
Personal services . . . .	\$50,013 10		\$50,098 03		\$55,788 00	
Maintenance . . . . .	35,146 11		29,920 83		40,400 00	
		85,159 21		80,018 86		96,188 00
Short Courses:						
Personal services . . . .	\$52,600 00		\$50,763 47		\$60,357 00	
Maintenance . . . . .	12,077 69		11,144 02		15,350 00	
		64,677 69		61,907 49		75,707 00
Market Garden Field Station:						
Personal services . . . .	\$7,000 00		\$5,480 94		\$6,000 00	
Maintenance . . . . .	3,339 08		3,780 12		4,400 00	
		10,339 08		9,261 06		10,400 00
Trustees travel . . . . .	\$1,369 17		\$1,404 61		\$1,200 00	
Printing reports . . . . .	2,000 00		1,744 94		2,000 00	
Commercial feedstuffs . .	9,000 00		8,459 64		9,500 00	
Totals . . . . .		12,369 17		11,609 19		12,700 00
Fertilizer law . . . . .	\$13,509 17		\$13,325 10		\$13,500 00	
Poultry law . . . . .	7,516 95		7,621 10		8,000 00	
Milk testing law . . . . .	600 00		544 15		600 00	
Totals . . . . .		21,626 12		21,490 35		22,100 00
Replacements . . . . .	\$38,830 75		\$38,866 66		\$27,500 00	
		38,830 75		38,866 66		27,500 00
Totals . . . . .		\$904,697 09		\$896,881 14		\$938,659 00
Balance unexpended . . .		-		7,815 95		-
		-		\$904,697 09		-

**CASH STATEMENT.**

Balance Dec. 1, 1922 . . . . .	Other Funds.	State Funds.
	\$37,379 40	-
<i>Receipts.</i>		
College receipts from students and others:		
Tuition . . . . .	-	\$5,197 57
Laboratory fees . . . . .	-	6,849 19
Rents . . . . .	-	11,855 88
Departmental sales:		
Produce . . . . .	-	66,508 98
Miscellaneous . . . . .	-	8,371 02
Experiment Station:		
Cranberry receipts . . . .	-	474 53
Chemical receipts . . . . .	-	473 18
Miscellaneous . . . . .	-	2,568 51
Extension Service:		
Correspondence Courses . .	-	1,261 75
Miscellaneous . . . . .	-	142 71
Short Courses:		
Students' fees . . . . .	-	4,887 14
Winter school . . . . .	-	366 00
Miscellaneous . . . . .	-	-
Market Garden Field Station:		
Produce . . . . .	-	3,363 57
Feed Law . . . . .	-	19,726 00
Fertilizer Law . . . . .	-	14,504 18
Milk Testing Law . . . . .	-	779 85
Poultry Disease Law . . . .	-	3,958 64

		Other Funds.	State Funds.
Treasurer of the Commonwealth:			
Maintenance		-	\$802,887 68
Special appropriations		-	142,431 97
Endowment.		\$3,313 32	-
Department of Education.		1,950 00	-
Federal Government:			
Land Grant of 1862		7,300 00	-
Hatch Fund of 1887		15,000 00	-
Morrill Fund of 1890.		16,666 67	-
Adams Fund of 1906		15,000 00	-
Nelson Fund of 1907		16,666 66	-
Smith Lever Fund of 1914		31,234 76	-
Short Course, Federal Project		9,650 00	-
Short Course, Two Years		201 45	-
November and October schedules in transit		-	113,316 40
		<hr/>	<hr/>
		\$154,362 26	\$1,209,924 75
		<i>Payments.</i>	
College expenses:			
Personal services.		\$45,896 65	\$347,374 67
Maintenance		-	243,172 91
Experiment Station:			
Personal services.		27,330 00	62,777 87
Maintenance		2,389 00	20,402 08
Extension service:			
Personal services.		26,893 45	50,098 03
Maintenance		2,558 72	29,920 83
Short Courses:			
Personal services.		7,538 23	50,763 47
Maintenance		4,360 13	11,144 02
Market Garden Field Station:			
Personal services.		-	5,480 94
Maintenance		-	3,780 12
Trustees travel		-	1,404 61
Printing reports		-	1,744 94
Replacements		-	38,866 66
Commercial feedstuffs		-	8,459 64
Fertilizer law		-	13,325 10
Milk testing law		-	544 15
Poultry disease law.		-	7,621 10
Special appropriations:			
1922 Chemistry Laboratory		-	128,554 94
1922 Power Plant Improvements		-	4,395 29
1922 Tillson Farm Improvements		-	181 35
1923 Tenement House		-	2,243 57
1923 Tillson Farm Improvements		-	4,170 55
1923 Tool shed and Garage		-	5,024 42
1923 New Walks.		-	2,239 94
1923 Road Improvements.		-	7,991 61
1923 Livestock		-	2,067 28
1915 Microbiology Building		-	4,885 96
Income		-	151,288 70
Balance		37,396 08	-
		<hr/>	<hr/>
		\$154,362 26	\$1,209,924 75

## CURRENT ACCOUNTS, 1923.

## Disbursements and Receipts.

ACCOUNTS.	Disbursements from Nov. 30, 1922, to Nov. 30, 1923.	Receipts from Nov. 30, 1922, to Nov. 30, 1923.	Apportionment for Year ending Nov. 30, 1923.	Balance to Credit.
Dean's Office . . . . .	\$767 66	-	\$701 73	-\$65 93
Executive Order . . . . .	10,242 36	\$0 63	12,150 15	1,907 79
President's Office . . . . .	1,989 60	3 76	2,032 47	42 87
Registrar's Office . . . . .	631 08	-	850 74	219 66
Salaries . . . . .	36,910 97	-	37,600 00	689 03
Treasurer's Office . . . . .	1,372 29	85 93	1,702 66	330 37
Maintenance, Academic:				
Agricultural Economics . . . . .	434 85	-	551 00	116 15
Agricultural Education . . . . .	209 79	-	407 93	198 14
Agronomy . . . . .	1,173 23	329 00	1,200 72	27 49
Animal Husbandry . . . . .	557 57	117 50	602 74	45 17
Beekeeping . . . . .	319 25	-	350 00	30 75
Botany . . . . .	1,577 58	746 00	1,605 60	28 02
Chemistry . . . . .	7,236 32	1,654 00	7,328 97	92 65
Dairying . . . . .	32,787 65	24,991 24	32,185 05	-602 60
Domestic Science . . . . .	1,531 59	119 50	1,434 06	-97 53
Economics and Sociology . . . . .	75 83	-	150 73	74 90
Entomology . . . . .	1,217 75	137 00	1,304 00	86 25
Farm Management . . . . .	402 01	62 50	507 45	105 44
Floriculture . . . . .	7,343 36	2,777 43	7,511 62	168 26
Forestry . . . . .	272 26	-	351 15	78 89
General Agriculture . . . . .	2,419 15	-	2,500 00	80 85
Horticultural Mfgs. . . . .	3,328 38	564 27	3,533 99	205 61
Hospital . . . . .	4,383 29	845 05	3,361 24	-1,022 05
Landscape Gardening . . . . .	344 72	361 84	502 55	157 83
Language and Literature . . . . .	292 10	163 00	300 00	7 90
Mathematics . . . . .	345 75	47 00	400 15	54 40
Microbiology . . . . .	1,988 76	451 85	2,405 34	416 58
Military Science . . . . .	1,673 64	33 50	1,700 95	27 31
Mount Toby . . . . .	3,479 64	8 25	3,505 35	25 71
Physical Education . . . . .	1,621 30	767 80	1,350 00	-271 30
Physics . . . . .	719 21	66 00	776 53	57 32
Pomology . . . . .	5,497 17	2,694 11	5,506 61	9 44
Poultry Husbandry . . . . .	16,712 90	19,416 31	14,544 92	-2,167 98
Rural Engineering . . . . .	888 44	105 50	900 25	11 81
Rural Sociology . . . . .	113 12	-	201 75	88 63
Vegetable Gardening . . . . .	6,634 72	2,333 99	6,501 12	-133 60
Veterinary Science . . . . .	2,399 44	100 00	2,361 30	-38 14
Women's Dormitory . . . . .	3,019 34	-	2,710 62	-308 72
Zoology and Geology . . . . .	473 79	110 00	650 25	176 48
Maintenance, General:				
Farm . . . . .	16,778 87	1,233 02	13,560 93	-3,217 94
General Horticulture . . . . .	9,250 44	157 66	9,018 73	-231 71
Graduate School . . . . .	82 44	-	200 00	117 56
Grounds . . . . .	8,370 38	-	9,500 00	1,129 62
Library . . . . .	7,113 20	96 56	8,096 08	982 88
Livestock . . . . .	28,361 93	14,359 88	23,754 50	-4,607 43
General Expense . . . . .	648 80	1,496 69	-	-
Operating and Maintenance . . . . .	165,541 54	22,345 87	165,895 13	353 59
Replacements . . . . .	38,866 66	-	38,830 75	-35 91
Endowment Fund . . . . .	10,613 32	10,613 32	10,613 32	3,650 00
Instruction:				
Salaries . . . . .	191,012 12	-	192,000 00	987 88
U. S. Treasurer, Morrill Fund . . . . .	16,666 67	16,666 67	16,666 67	9,722 22
U. S. Treasurer, Nelson Fund . . . . .	16,666 66	16,666 66	16,666 66	9,722 21
State Treasurer, Account of schedules . . . . .	-	629,414 24	-	-
Income to State Treasurer . . . . .	98,782 64	-	-	-
Balance beginning fiscal year, Dec. 1, 1922 . . . . .	\$772,143 53	\$772,143 53	\$669,044 46	\$19,426 80
Balance on hand Nov. 30, 1923 . . . . .	23,094 43	-	-	-
	\$795,237 96	\$795,237 96	-	-

## COLLEGE ACCOUNTS.

*Summary.*

	Disburse- ments.	Receipts.
Cash on hand Dec. 1, 1922 . . . . .	—	\$23,094 43
Institution receipts Nov. 30, 1923 . . . . .	—	98,782 64
State Treasurer's receipts Nov. 30, 1923 . . . . .	—	629,414 24
United States Treasurer's receipts Nov. 30, 1923 . . . . .	—	33,333 33
State Treasurer, Department of Education . . . . .	—	1,950 00
State Treasurer, Endowment fund . . . . .	—	10,613 32
Total Disbursements . . . . .	\$675,310 89	—
Receipts turned in to State Treasurer . . . . .	98,782 64	—
	<hr/>	<hr/>
	\$774,093 53	\$797,187 96
Bills receivable Dec. 1, 1922 deducted . . . . .	—	14,219 25
Bills payable Dec. 1, 1922, deducted . . . . .	1,063 12	—
	<hr/>	<hr/>
	\$773,030 41	\$782,968 71
Bills receivable Nov. 30, 1923 . . . . .	—	11,029 42
Bills payable Nov. 30, 1923 . . . . .	1,961 24	—
Balance . . . . .	19,006 48	—
	<hr/>	<hr/>
	\$793,998 13	\$793,998 13



## NET COSTS OF THE DEPARTMENTS.

DEPARTMENT.	Salaries.	Labor.	Maintenance.	Total.	Receipts.	Balance.
Dean's Office . . . . .	\$5,125 00	\$382 75	\$384 91	\$5,892 66	—	\$5,892 66
Executive Order . . . . .	1,155 00	1,037 50	9,204 86	11,397 36	\$0 63	11,396 73
President's Office . . . . .	15,473 57	318 19	1,671 41	17,463 17	3 76	17,459 41
Registrar's Office . . . . .	— <sup>1</sup>	95 57	535 51	631 08	—	631 08
Treasurer's Office . . . . .	15,157 40	219 69	1,152 60	16,529 69	85 93	16,443 76
Totals.	\$36,910 97	\$2,053 70	\$12,949 29	\$51,913 96	\$90 32	\$51,823 64
<i>Instruction and Maintenance.</i>						
Agricultural Economics . . . . .	\$8,932 97	\$62 49	\$372 36	\$9,367 82	—	\$9,367 82
Agricultural Education . . . . .	6,518 35	—	209 79	6,728 14	—	6,728 14
Agromony . . . . .	8,785 00	581 33	591 90	9,958 23	\$329 00	9,629 23
Animal Husbandry . . . . .	5,560 00	79 77	477 80	6,117 57	117 50	6,000 07
Beekeeping . . . . .	1,440 00	114 15	205 10	1,759 25	—	1,759 25
Botany . . . . .	11,955 13	349 00	1,228 58	13,532 71	746 00	12,786 71
Chemistry . . . . .	13,581 98	945 09	6,291 23	20,818 30	1,654 00	19,164 30
Dairying . . . . .	7,215 00	6,272 05	26,515 60	40,002 65	24,991 24	15,011 41
Dean's Office . . . . .	2,576 61	—	—	2,576 61	—	2,576 61
Domestic Science . . . . .	6,954 43	227 00	1,304 59	8,486 02	119 50	8,366 52
Economics and Sociology . . . . .	3,208 33	—	75 83	3,284 16	—	3,284 16
Entomology . . . . .	10,707 00	735 70	482 05	11,924 75	137 00	11,787 75
Farm . . . . .	—	24,049 94	21,090 86	45,140 80	15,592 90	29,547 90
Farm Management . . . . .	5,500 01	84 20	317 81	5,902 02	62 50	5,839 52
Floriculture . . . . .	2,865 27	6,056 27	1,287 09	10,208 36	2,777 43	7,430 93
Forestry . . . . .	2,530 02	150 97	121 29	2,802 28	—	2,802 28
General Agriculture . . . . .	3,846 53	1,820 29	598 86	6,265 68	—	6,265 68
General expense . . . . .	—	1,955 17	Cr. 1,306 37	648 80	1,496 69	—847 89
General Horticulture . . . . .	10,440 01	5,898 51	3,351 93	19,690 45	157 66	19,532 79
Graduate School . . . . .	—	—	82 44	82 44	—	82 44
Grounds . . . . .	—	7,335 30	1,035 08	8,370 38	—	8,370 38
Horticultural Manufactures . . . . .	5,340 00	1,623 46	1,704 92	8,668 38	564 27	8,104 11
Hospital . . . . .	—	2,430 92	1,952 37	4,383 29	845 05	3,538 24
Landscape Gardening . . . . .	3,289 00	—	344 72	3,633 72	361 84	3,271 88

<sup>1</sup> Registrar's Office Salaries included in "Instruction and Maintenance."

<i>Instruction and Maintenance — Con.</i>	Salaries.	Labor.	Maintenance.	Total.	Receipts.	Balance.
Language and Literature. . . . .	\$22,203 33	\$13 97	\$278 13	\$22,495 43	\$163 00	\$22,332 43
Library. . . . .	8,888 61	1,600 36	5,512 84	16,001 81	96 56	15,905 25
Mathematics . . . . .	10,740 00	206 05	139 70	11,085 75	47 00	11,038 75
Microbiology . . . . .	11,045 00	736 20	1,252 56	13,033 76	451 85	12,581 91
Military . . . . .	600 00	280 28	1,393 36	2,273 64	33 50	2,240 14
Mount Toby . . . . .	—	3,270 63	209 01	3,479 64	8 25	3,471 39
Operating and Maintenance	—	32,478 73	133,062 81	165,541 54	22,345 87	143,195 67
Physical Education . . . . .	10,270 00	755 63	865 67	11,891 30	767 80	11,123 50
Physics . . . . .	8,370 00	186 53	532 68	9,089 21	66 00	9,023 21
Pomology . . . . .	6,430 01	4,407 72	1,089 45	11,927 18	2,694 11	9,233 07
Poultry Husbandry . . . . .	9,285 00	3,535 04	13,177 86	25,997 90	19,416 31	6,581 59
Registrar's Office . . . . .	2,160 00	—	—	2,160 00	—	2,160 00
Rural Engineering . . . . .	5,900 00	378 84	509 60	6,788 44	105 50	6,682 94
Rural Sociology . . . . .	4,790 00	—	113 12	4,903 12	—	4,903 12
Replacements . . . . .	—	—	38,866 66	38,866 66	—	38,866 66
Vegetable Gardening . . . . .	2,445 00	5,080 31	1,554 41	9,079 72	2,333 99	6,745 73
Veterinary. . . . .	5,476 45	1,350 86	1,048 58	7,875 89	100 00	7,775 89
Women's Dormitory . . . . .	—	2,274 74	744 60	3,019 34	—	3,019 34
Zoölogy and Geology . . . . .	5,110 00	70 38	403 41	5,583 79	110 00	5,473 79
Totals. . . . .	\$234,958 77	\$117,397 88	\$269,090 28	\$621,446 93	\$98,692 32	\$522,754 61
Grand Totals . . . . .	\$271,869 74	\$119,451 58	\$282,039 57	\$673,360 89	\$98,782 64	\$574,578 25

\$10,613 32 Land Grant and Endow.	Total of this Statement:
33,333 33 Morrill & Nelson	\$673,360 89
191,012 12 Instruction	1,950 00 Dept. of Education
36,910 97 Administration	
<u>\$271,869 74</u>	<u>\$675,310 89</u>
1,950 00 Dept. of Education	
<u>\$273,819 74</u>	

## FARM DISBURSEMENTS.

	Repairs.	Labor.	Equip- ment.	Feed.	Supplies.	Sundry.	Bedding.	Fer- tilizer.	Seeds.	Impts.	Totals.
Dairy Cattle . . . . .	-	\$6,115 73	\$339 90	\$197 56	\$1,841 20	\$1,468 60	-	-	-	-	\$9,962 99
Horses . . . . .	-	1,649 67	5 67	-	19 44	119 34	-	-	-	-	1,794 12
Sheep . . . . .	-	1,210 31	29 60	-	49 42	25 78	-	-	-	-	1,315 11
Swine . . . . .	-	1,258 50	-	312 40	5 88	50 01	-	-	-	-	1,626 79
Supplies . . . . .	-	609 48	-	10,870 98	-	-	\$2,182 46	-	-	-	13,662 92
Teams . . . . .	-	- 20 97	314 42	-	-	217 50	-	-	-	-	510 95
Field crops . . . . .	-	6,356 41	-	-	4 44	21 00	-	\$480 59	\$262 25	-	7,124 69
Tools & Mach. . . . .	\$708 15	631 51	205 13	-	552 07	-	-	-	-	-	2,096 86
Miscellaneous . . . . .	-	6,239 30	-	-	86 17	277 44	-	-	-	\$443 46	7,046 37
Totals . . . . .	\$708 15	\$24,049 94	\$894 72	\$11,380 94	\$2,558 62	\$2,179 67	\$2,182 46	\$480 59	\$262 25	\$443 46	\$45,140 80

## FARM CREDITS.

	Wool.	Milk.	Stock.	Sundry.	Labor.	Field Crops.	Tools and Machinery.	Improve- ments.	Totals.
Dairy Cattle . . . . .	-	\$7,697 71	\$3,997 22	\$32 06	-	-	-	-	\$11,726 99
Horses . . . . .	-	-	30 00	-	-	-	-	-	30 00
Sheep . . . . .	-	-	1,297 51	-	-	-	-	-	1,297 51
Swine . . . . .	-	-	1,305 38	-	-	-	-	-	1,305 38
Supplies . . . . .	-	-	-	-	-	-	-	-	-
Teams . . . . .	-	-	-	-	\$108 00	-	-	-	108 00
Field Crops . . . . .	-	-	-	-	-	\$124 10	-	-	124 10
Tools & Machinery . . . . .	-	-	-	-	-	-	\$28 00	-	28 00
Miscellaneous . . . . .	-	-	-	-	168 60	-	-	\$804 32	972 92
Totals . . . . .	-	\$7,697 71	\$6,630 11	\$32 06	\$276 60	\$124 10	\$28 00	\$804 32	\$15,592 90

AGRICULTURAL DIVISION.  
*Disbursements and Receipts.*

	Disbursements.	Receipts.
Agronomy . . . . .	\$1,173 23	\$329 00
Animal husbandry . . . . .	557 57	117 50
Dairying . . . . .	32,787 65	24,991 24
Farm . . . . .	35,408 30	15,332 80
Farm management . . . . .	402 01	62 50
Poultry husbandry . . . . .	16,712 90	19,416 31
Rural engineering . . . . .	888 44	105 50
Division totals . . . . .	\$87,930 10	\$60,354 85

*Summary.*

	DR.	CR.
By total division receipts . . . . .		\$60,354 85
By bills receivable . . . . .		9,769 94
By net apportionment . . . . .		26,901 71
To total division disbursements . . . . .	\$87,930 10	
To bills payable . . . . .	624 71	
Balance . . . . .	8,471 69	
	\$97,026 50	\$97,026 50

*Inventory of Quick Assets.*

	Nov. 30, 1922.	Nov. 30, 1923.
Inventory of produce . . . . .	\$13,038 91	\$16,370 55
Inventory of cattle . . . . .	19,510 00	22,855 00
Inventory of swine . . . . .	1,487 00	1,481 00
Inventory of horses . . . . .	3,800 00	3,775 00
Inventory of poultry . . . . .	4,243 75	4,783 50
Inventory of sheep . . . . .	1,805 00	2,020 00
	\$43,884 66	\$51,284 55

HORTICULTURAL DIVISION.  
*Disbursements and Receipts.*

	Disbursements.	Receipts.
Floriculture . . . . .	\$7,343 36	\$2,777 43
Forestry . . . . .	272 26	—
General horticulture . . . . .	9,250 44	157 66
Grounds . . . . .	8,370 38	—
Horticultural manufactures . . . . .	3,328 38	564 27
Landscape gardening . . . . .	344 72	361 84
Mount Toby . . . . .	3,479 64	8 25
Pomology . . . . .	5,497 17	2,694 11
Vegetable gardening . . . . .	6,634 72	2,333 99
Division totals . . . . .	\$44,521 07	\$8,897 55

*Summary.*

	DR.	CR.
By total division receipts . . . . .		\$8,897 55
By bills receivable . . . . .		1,087 98
By net apportionment . . . . .		37,033 57
To total division disbursements . . . . .	\$44,521 07	
To bills payable . . . . .	136 96	
By balance . . . . .	2,361 07	
	\$47,019 10	\$47,019 10



Inventory of Quick Assets.

	Nov. 30, 1922.	Nov. 30, 1923.
Floriculture	\$1,800 00	\$2,700 00
General horticulture (live stock)	1,385 00	1,140 00
Horticultural manufactures	420 00	295 00
Mount Toby	98 75	78 40
Pomology	1,300 00	575 00
Vegetable gardening	75 00	547 00
	\$5,078 75	\$5,335 40

EXPERIMENT STATION.

Disbursements and Receipts.

	Disbursements from Dec. 1, 1922, to Nov. 30, 1923.	Receipts from Dec. 1, 1922, to Nov. 30, 1923.	Apportion- ment for year ending Nov. 30, 1923.	Balance to Credit.
Administration	\$1,553 67	-	\$1,643 15	\$89 48
Agricultural.	10,946 73	\$306 99	10,975 00	28 27
Agricultural economics	803 02	-	1,050 00	246 98
Animal husbandry	100 91	-	-	-100 91
Asparagus	-	-	140 00	140 00
Botanical	2,982 67	-	2,808 25	-174 42
Chemical	2,868 02	473 18	4,109 52	1,241 50
Cranberry	3,501 14	474 53	4,030 20	529 06
Entomological	663 95	-	1,102 90	438 95
Farm management	192 00	-	200 00	8 00
Freight and Express	442 40	-	400 00	-42 40
Library	891 39	-	1,034 29	142 90
Meteorology	468 93	-	600 00	131 07
Microbiology	916 69	-	1,003 46	86 77
Pomology	3,242 38	2,261 52	3,046 06	-196 32
Poultry	4,323 65	-	3,624 57	-699 08
Publications.	1,234 87	-	2,011 39	776 52
Salaries.	76,722 25	-	76,077 00	-645 25
Treasurer's office.	309 26	-	400 00	90 74
Veterinary	735 02	-	800 00	64 98
Hatch fund.	-	15,000 00	-	-
Adams fund.	-	15,000 00	-	-
State Treasurer, account of schedules	-	83,179 95	-	-
Income remitted to Estate Treasurer	3,516 22	-	-	-
Balance beginning fiscal year Dec. 1, 1922	\$116,415 17	\$116,696 17	\$115,055 79	\$2,156 84
Balance on hand Nov. 30, 1923	4,275 00	3,994 00	-	-
	\$120,690 17	\$120,690 17	-	-

Summary.

	Disburse- ments.	Receipts.
Cash on hand Dec. 1, 1922	-	\$3,994 00
Receipts from State Treasurer	-	83,179 95
Receipts from United States Treasurer	-	30,000 00
Receipts from other sources	-	3,516 22
Total Disbursements	\$112,898 95	-
Receipts turned in to State Treasurer	3,516 22	-
	\$116,415 17	\$120,690 17
Bills receivable Dec. 1, 1922 deducted	-	1,046 60
Bills payable Dec. 1, 1922 deducted	34 43	-
	\$116,380 74	\$119,643 57
Bills receivable Nov. 30, 1923	-	1,273 14
Bills payable Nov. 30, 1923	329 96	-
Balance.	4,206 01	-
	\$120,916 71	\$120,916 71

**EXTENSION SERVICE.**  
*Disbursements and Receipts.*

CLASSIFICATION.	Disbursements.	Receipts.	Apportionment.	Balance.
Administration . . . . .	\$2,156 35	\$97 86	\$3,514 64	\$1,358 29
Animal husbandry . . . . .	585 31	—	1,001 50	416 19
Clothing efficiency . . . . .	2,168 86	—	1,207 60	—961 26
Co-op. Marketing . . . . .	489 18	—	900 30	411 12
Correspondence Courses . . . . .	2,827 50	1,261 75	2,100 60	—726 90
County Agents Work . . . . .	987 73	—	1,210 06	222 33
Dairying . . . . .	196 08	—	300 00	103 92
Exhibits . . . . .	238 31	—	752 30	513 99
Extension Courses at College . . . . .	1,868 13	—	1,500 00	—368 13
Extension schools . . . . .	489 17	—	250 60	—238 57
Farm management demonstration . . . . .	935 27	16 50	1,202 95	267 68
Forestry . . . . .	21 10	—	200 00	178 90
Home economics . . . . .	2,080 98	27 10	2,016 87	—64 11
Home gardening . . . . .	537 76	—	500 00	—37 76
Horticultural manufactures . . . . .	1,554 49	—	1,201 75	—352 74
Junior extension work . . . . .	5,349 89	—	5,518 09	168 20
Landscape extension . . . . .	217 61	—	826 05	608 44
Lectures . . . . .	105 90	—	125 00	19 10
Library extension . . . . .	152 43	—	241 50	89 07
Nutrition and household management . . . . .	1,667 98	—	1,817 25	149 27
Plant diseases . . . . .	11 02	—	—	—11 02
Pomology . . . . .	1,237 78	—	1,501 65	263 87
Poultry husbandry . . . . .	1,010 16	—	1,200 60	190 44
Printing . . . . .	2,691 45	1 25	4,756 15	2,064 70
Personal services . . . . .	50,098 03	—	50,013 10	—84 93
Rural engineering . . . . .	14 04	—	400 00	385 96
Soils and crops . . . . .	326 35	—	900 65	574 30
State Treasurer, account of schedules . . . . .	—	80,018 86	—	—
Income to State Treasurer . . . . .	1,404 46	—	—	—
	\$81,423 32	\$81,423 32	\$85,159 21	\$5,140 35

*Summary.*

	Disbursements.	Receipts.
Balance Dec. 1, 1922 <sup>1</sup> . . . . .	—	\$7,303 82
Receipts Nov. 30, 1923 . . . . .	—	\$1,404 46
Received from State Treasurer . . . . .	—	80,018 86
Received from United States Treasurer . . . . .	—	31,234 76
Disbursements to Nov. 30, 1923 <sup>1</sup> . . . . .	\$109,471 03	—
Receipts turned into State Treasurer . . . . .	1,404 46	—
	\$110,875 49	\$119,961 90
Bills receivable Dec. 1, 1922 deducted . . . . .	—	55 47
Bills payable Dec. 1, 1922 deducted . . . . .	—	—
	\$110,875 49	\$119,906 43
Bills receivable Nov. 30, 1923 . . . . .	—	23 32
Bills payable Nov. 30, 1923 . . . . .	58 84	—
Balance . . . . .	8,995 42	—
	\$119,929 75	\$119,929 75

<sup>1</sup> Includes Federal Smith Lever Fund.

## SMITH-LEVER FUND (FEDERAL).

	Disbursements.	Receipts.
Administration . . . . .	\$207 91	—
Animal husbandry . . . . .	111 66	—
Clothing efficiencies . . . . .	86 98	—
Co-operative marketing . . . . .	79 87	—
Dairying . . . . .	13 79	—
District and county agents . . . . .	77 25	—
Farm management demonstration . . . . .	5 08	—
Forestry . . . . .	22 24	—
Home economics . . . . .	111 02	—
Home gardening . . . . .	139 76	—
Horticultural manufactures . . . . .	287 99	—
Junior extension works . . . . .	914 60	—
Landscape gardening . . . . .	47 36	—
Nutrition and household management . . . . .	71 98	—
Pomology . . . . .	123 82	—
Poultry husbandry . . . . .	152 02	—
Salaries . . . . .	26,893 45	—
Soils and crops . . . . .	105 39	—
State Treasurer . . . . .	—	\$31,234 76
	<hr/>	
	\$29,452 17	\$31,234 76
Balance beginning fiscal year December 1, 1922 . . . . .	—	7,303 82
Balance on hand November 30, 1923 . . . . .	9,086 41	—
	<hr/>	
Totals . . . . .	\$38,538 58	\$38,538 58

## SHORT COURSES.

	Disbursements.	Receipts.	Apportionment.	Balance.
Agricultural economics . . . . .	\$14 97	—	\$100 00	\$85 03
Agronomy . . . . .	477 00	\$318 00	501 25	24 25
Animal husbandry . . . . .	97 79	96 00	100 00	2 21
Dairying . . . . .	3,000 50	401 00	3,000 00	—50
Domestic science . . . . .	91 25	—	100 00	8 75
Entomology . . . . .	85 20	—	50 00	—35 20
Farm Management . . . . .	11 28	—	50 00	38 72
Floriculture . . . . .	89 01	58 50	100 00	10 99
Forestry . . . . .	—	—	100 00	100 00
General horticulture . . . . .	138 33	111 50	217 39	79 06
Horticulture manufactures . . . . .	651 30	—	750 00	98 70
Library . . . . .	43 14	—	150 00	106 86
Microbiology . . . . .	49 54	35 00	50 00	46
Pomology . . . . .	919 10	—	1,047 05	127 95
Poultry husbandry . . . . .	480 25	459 00	600 00	119 75
Personal services . . . . .	50,763 47	—	52,600 00	1,836 53
Rural Engineering . . . . .	852 13	393 00	851 56	—57
Short Course office . . . . .	3,691 34	—	3,810 44	119 10
Treasurer's office . . . . .	168 35	—	200 00	31 65
Tuition . . . . .	—	2,937 14	—	—
Vegetable gardening . . . . .	283 54	78 00	300 00	16 46
Winter school registration . . . . .	—	366 00	—	—
	<hr/>			
Totals . . . . .	\$61,907 49	\$5,253 14	\$64,677 69	\$2,770 20

*Summary.*

	Dr.	Cr.
State Appropriation . . . . .		\$64,677 69
Amount of receipts . . . . .		5,253 14
Amount of receipts transferred to State Treasurer . . . . .	\$5,253 14	
Department expenditures . . . . .	61,907 49	
Balance unexpended . . . . .	2,770 20	
Totals . . . . .	\$69,930 83	\$69,930 83

## MARKET-GARDENING FIELD STATION.

	Debit.	Credit.
Labor . . . . .	\$5,480 94	
Maintenance . . . . .	3,780 12	
Totals . . . . .	\$9,261 06	
State Appropriation . . . . .		\$10,339 08
Amount of receipts . . . . .		3,363 57
Amount of receipts transferred to State Treasurer . . . . .	\$3,363 57	
Department expenditures . . . . .	9,261 06	
Balance unexpended . . . . .	1,078 02	
Totals . . . . .	\$13,702 65	\$13,702 65

## SPECIAL APPROPRIATIONS.

	Date made.	Appropriations.	Amount Expended to Date.	Unexpended Balance.
Chemistry Laboratory . . . . .	1922	\$300,000 00	\$185,275 31	\$114,724 69
Power Plant Improvements . . . . .	1922	63,000 00	63,000 00	—
Tillson Farm Improvements . . . . .	1922	5,000 00	5,000 00	—
Tenement House . . . . .	1923	8,000 00	2,243 57	5,756 43
Tillson Farm Improvements . . . . .	1923	5,000 00	4,170 55	829 45
Tool Shed and Garage . . . . .	1923	6,000 00	5,024 42	975 58
Walks . . . . .	1923	2,500 00	2,239 94	260 06
Roads . . . . .	1923	8,000 00	7,991 61	8 39
Live stock . . . . .	1923	5,000 00	2,067 28	2,932 72
Microbiology Building . . . . .	1915	4,887 61	4,885 96	1 65
Amount spent previous to Dec. 1, 1922 . . . . .	—	\$407,387 61	\$281,898 64	\$125,488 97
Amount expended during fiscal year . . . . .	—	—	—	120,143 73
Unexpended balance Nov. 30, 1923 . . . . .	—	—	125,488 97	161,754 91
	—	\$407,387 61	\$407,387 61	\$407,387 61

## INVENTORY — REAL ESTATE.

*Land (Estimated Value).*

Angus land . . . . .	\$800 00
Allen place . . . . .	500 00
Baker place . . . . .	2,500 00
Bangs place . . . . .	2,350 00
Brooks farm . . . . .	11,000 00
Brown land . . . . .	500 00
Charmbury place . . . . .	450 00
Clark place . . . . .	4,500 00
College farm . . . . .	37,000 00
Cranberry land . . . . .	12,745 00
George Cutler, Jr., Trustee . . . . .	2,700 00
Dickinson land . . . . .	7,850 00
Harlow farm and orchard . . . . .	3,284 63
Hawley and Brown place . . . . .	675 00
Kellogg place . . . . .	3,368 45



P.D. 31.	41
Loomis place . . . . .	\$415 00
Louisa Baker place . . . . .	5,000 00
Market Garden Field Station . . . . .	4,800 00
Mount Toby demonstration forest . . . . .	30,000 00
Newell farm . . . . .	2,800 00
Old creamery place . . . . .	1,000 00
Owen farm . . . . .	5,000 00
Pelham quarry . . . . .	500 00
Tillson farm . . . . .	2,950 00
Westcott place . . . . .	2,250 00

\$144,938 08

*College Buildings (Estimated Value) 1923.*

	Inventory at Beginning of Year.	Per Cent deducted.	Value at Beginning of Year less Deterioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Adams Hall . . . . .	\$127,604 51	2	\$125,052 42	\$757 48	\$125,809 90
Apiary . . . . .	2,884 82	2	2,827 13	-	2,827 13
Cashier's House . . . . .	1,675 99	5	1,592 19	553 64	2,145 83
Chemistry Store House . . . . .	50 00	2	49 00	55	49 55
Clark Hall . . . . .	61,066 59	2	59,845 26	360 43	60,205 69
Cold Storage Laboratory . . . . .	10,375 39	2	10,168 32	4 30	10,172 62
Dairy barn and storage . . . . .	30,162 98	3	29,258 09	103 40	29,361 49
Draper Hall . . . . .	69,615 10	3	67,526 65	4,445 02	71,971 67
Drill Hall and Gun Shed . . . . .	9,183 03	5	8,723 88	499 64	9,223 52
Durfee Glass House, old . . . . .	7,298 59	5	6,933 66	362 63	7,296 29
Durfee Glass House, new . . . . .	10,464 50	5	9,441 27	805 89	10,247 16
Farm blacksmith shop . . . . .	431 06	3	418 13	-	418 13
Farm bungalow . . . . .	2,509 37	3	2,434 09	43 55	2,477 64
Farm House No. 1 . . . . .	3,097 06	3	3,004 15	192 47	3,196 62
Farm Bull pens and Fence . . . . .	3,377 50	5	3,208 62	1,320 78	4,529 40
Fernald Hall . . . . .	70,781 06	2	69,365 44	616 65	69,982 09
Flint Laboratory . . . . .	68,856 08	2	67,478 96	2,101 62	69,580 58
French Hall . . . . .	45,476 95	2	44,567 41	1,129 36	45,696 77
Grinnell Arena . . . . .	8,741 11	2	8,566 29	62 06	8,628 35
Grounds Tool Shed . . . . .	199 55	5	189 57	-	189 57
Harlow House . . . . .	1,956 56	5	1,858 73	231 56	2,090 29
Horse Barn . . . . .	4,655 80	3	4,516 13	110 95	4,627 08
Head of Division of Horticulture . . . . .	2,486 60	5	2,362 27	399 07	2,761 34
Horticultural barn . . . . .	3,655 43	3	3,545 77	216 05	3,761 82
Horticultural Garage . . . . .	-	-	-	1,533 48	1,533 48
Horticultural tool shed . . . . .	1,567 39	3	1,520 37	2,773 69	4,294 06
Horticultural open shed . . . . .	469 35	5	445 88	-	445 88
Horticultural Manufactures shed . . . . .	3,443 56	5	3,271 38	-	3,271 38
Hospital . . . . .	15,477 99	2	15,168 43	258 45	15,426 88
Jewett house and barn . . . . .	3,106 31	5	2,950 99	205 04	3,156 03
Machinery barn . . . . .	3,331 69	3	3,231 74	110 46	3,342 20
Market Garden Field Station barn . . . . .	3,024 29	3	2,933 56	-	2,933 56
Market Garden Field Station Foreman's Cottage . . . . .	4,107 03	3	3,983 82	-	3,983 82
Market Garden Field Station Greenhouse Plant . . . . .	9,002 44	5	8,552 32	-	8,552 32
Market Garden Field Station Wagon shed . . . . .	507 02	3	491 81	-	491 81
Market Garden Field Station Administration Building . . . . .	8,730 00	3	8,468 10	-	8,468 10
Market Garden Field Station Boiler House . . . . .	5,645 40	3	5,476 04	-	5,476 04
Mathematical Building . . . . .	4,538 37	5	4,311 46	83 44	4,394 90
Memorial Hall . . . . .	103,486 14	2	101,416 42	716 60	102,133 02
Microbiology Building . . . . .	56,243 44	2	55,118 57	359 02	55,477 59
Military Storage . . . . .	203 62	5	193 44	-	193 44
Mount Toby House and Barn . . . . .	3,312 00	5	3,146 40	256 23	3,402 63
North Dormitory . . . . .	27,219 47	2	26,675 08	878 27	27,553 35
Physics Laboratory . . . . .	4,797 18	5	4,557 32	77 48	4,634 80
Piggery . . . . .	2,395 35	3	2,323 49	12 48	2,335 97
Poultry departments:					
No. 1, demonstration building . . . . .	1,516 03	2	1,485 71	387 58	1,873 29
2, oil house . . . . .	73 56	2	72 09	-	72 09
3, brooder, killing and fattening laboratory . . . . .	2,315 10	2	2,268 80	-	2,268 80
4, mechanics, storage building and incubator cellar . . . . .	3,969 67	2	3,890 28	259 31	4,149 59
5, laying house . . . . .	1,632 01	2	1,599 37	150 91	1,750 28
6, manure shed . . . . .	87 38	2	85 63	52 53	138 16
7, small henhouse . . . . .	43 97	2	43 09	-	43 09

## College Buildings, etc. — Concluded.

	Inventory at Beginning of Year.	Per Cent deducted.	Value at Beginning of Year less Deterioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Poultry departments — <i>Con.</i>					
No. 8, breeding house . . . . .	\$1,445 29	2	\$1,416 38	—	\$1,416 38
9, experimental breeding house . . . . .	546 25	2	535 32	\$49 67	584 99
10, duck house . . . . .	91 10	2	89 28	—	89 28
11, unit house for 200 hens . . . . .	457 36	2	448 21	—	448 21
12, unit house for 100 hens . . . . .	369 04	2	361 66	—	361 66
Power plant and storage building, including coal pocket . . . . .	48,271 84	2	47,306 40	2,165 99	49,472 39
President's house . . . . .	13,027 22	3	12,636 40	952 92	13,589 32
Rural engineering building . . . . .	15,294 44	2	14,988 55	55 08	15,043 63
Sheep barn . . . . .	1,343 03	3	1,302 74	6 04	1,308 78
South dormitory . . . . .	40,358 38	2	39,551 21	1,400 55	40,951 76
Stable for calvary unit . . . . .	18,149 31	3	17,604 83	151 98	17,756 81
Stockbridge Hall . . . . .	164,430 81	2	161,142 19	973 60	162,115 79
Agronomy greenhouse . . . . .	1,963 95	2	1,924 67	—	1,924 67
Stockbridge house . . . . .	2,356 49	5	2,238 67	1 38	2,240 05
Stone Chapel . . . . .	29,767 33	2	29,171 98	448 73	29,620 71
Turbine house . . . . .	18,067 43	2	17,706 08	—	17,706 08
Vegetable plant house . . . . .	4,365 31	5	4,147 04	1,106 29	5,253 33
Veterinary laboratory and stable . . . . .	22,221 91	2	21,777 47	1,785 86	23,563 33
Waiting Station . . . . .	507 27	2	497 12	5 99	503 11
Wilder Hall . . . . .	33,085 64	2	32,423 93	87 75	32,511 68
Young stock barns . . . . .	5,508 46	3	5,343 21	1,015 23	6,358 44
	\$1,238,479 25	—	\$1,209,228 36	\$32,639 13	\$1,241,867 49

## College Equipment (Estimated Value).

Administrative division:	
Dean's Office . . . . .	\$1,256 35
President's Office . . . . .	2,605 00
Registrar's Office . . . . .	1,270 15
Treasurer's Office . . . . .	5,196 82
Agricultural division:	
Agronomy . . . . .	8,717 52
Animal Husbandry . . . . .	1,014 87
Dairy . . . . .	23,721 29
Farm . . . . .	24,531 45
Farm Live stock . . . . .	30,131 00
Farm Management . . . . .	949 72
Freshman Agriculture . . . . .	107 55
General Agriculture . . . . .	2,401 12
Poultry . . . . .	11,169 11
Rural engineering . . . . .	7,225 75
Domestic science . . . . .	3,891 41
Dining Hall . . . . .	36,303 19
Extension . . . . .	13,582 14
General science:	
Apiary . . . . .	2,216 23
Botanical . . . . .	25,087 55
Chemistry . . . . .	17,017 14
Entomology . . . . .	5,888 33
Mathematics . . . . .	2,312 30
Microbiology . . . . .	6,937 15
Physics . . . . .	7,619 59
Veterinary . . . . .	14,318 29
Zoölogy and Geology . . . . .	17,092 94
Graduate School . . . . .	117 45

## Horticultural division:

Floriculture . . . . .	\$33,178 42
Forestry . . . . .	1,924 60
General Horticulture . . . . .	7,598 03
Grounds . . . . .	2,151 41
Horticulture Manufactures . . . . .	5,414 75
Landscape Gardening . . . . .	5,878 68
Market Garden Field Station . . . . .	2,486 85
Mount Toby Reservation . . . . .	297 21
Pomology . . . . .	7,699 35
Vegetable Garden . . . . .	4,252 58

## Hospital . . . . .

993 20

## Humanities division:

Economics and Sociology . . . . .	199 70
Language and Literature . . . . .	680 40

Library . . . . . 132,663 80

Military . . . . . 1,373 28

## Operating and Maintenance:

College supply . . . . .	1,143 59
Fire Apparatus . . . . .	1,534 50

## General Maintenance:

Office . . . . .	822 82
Carpentry and Masonry Supplies . . . . .	5,758 12
Carpentry and Masonry Tools . . . . .	4,583 38
Electrical supplies . . . . .	4,104 52
Electrical Tools . . . . .	222 15
Electrical Commencement Supplies . . . . .	619 75
Heating and Plumbing Supplies . . . . .	10,598 01
Heating and Plumbing Tools . . . . .	2,697 35
Painting Supplies . . . . .	1,778 02
Painting Tools . . . . .	227 03
Steam Main . . . . .	54,511 10
Lighting Lines . . . . .	9,904 30
Janitor's Supplies . . . . .	1,283 30
Sewer Line . . . . .	13,416 39
Water Mains . . . . .	13,378 18

## Power Plant

General Equipment . . . . .	106,485 45
Tools . . . . .	337 35
Supplies . . . . .	447 03
Fuel . . . . .	23,648 75

Physical Education . . . . . 1,839 82

## Rural Social Science:

Agricultural Economics . . . . .	1,849 61
Agricultural Education . . . . .	1,777 91
Rural Sociology . . . . .	351 63
Short Course . . . . .	2,033 44

Text Books . . . . . 2,567 75

Trophy Room . . . . . 1,200 00

Women's Dormitory . . . . . 10,779 49

Memorial Hall . . . . . 17,376 00

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 Totals . . . . . \$776,750 41

*Experiment Station Buildings (Estimated Value).*

	Inventory at Beginning of Year.	Per Cent.	Cost at Beginning of Year less Per Cent De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Year.
Agricultural laboratory . . . . .	\$14,535 21	2	\$14,244 51	\$77 66	\$14,322 17
Agricultural barn . . . . .	4,076 13	3	3,953 85	276 56	4,230 41
Agricultural farmhouse . . . . .	1,610 53	3	1,562 21	96 26	1,658 47
Agricultural glasshouse . . . . .	331 71	5	315 12	12 05	327 17
Brooks house . . . . .	2,500 00	5	2,375 00	555 99	2,930 99
Brooks barn and sheds . . . . .	1,500 00	5	1,425 00	—	1,425 00
Cranberry buildings . . . . .	2,926 18	5	2,779 87	—	2,779 87
Entomological glasshouses . . . . .	615 80	5	585 01	—	585 01
Plant and animal chemistry labora- tory . . . . .	27,380 73	2	26,833 12	363 52	27,196 64
Plant and animal chemistry barns . . . . .	5,103 44	3	4,950 34	395 94	5,346 28
Plant and animal chemistry dairy . . . . .	1,567 49	3	1,520 47	—	1,520 47
Six poultry houses . . . . .	717 15	2	702 81	—	702 81
Tillson house . . . . .	950 07	5	902 57	96 20	998 77
Tillson barn . . . . .	928 54	5	882 11	—	882 11
Tillson poultry houses (4) Nos. 2, 3, 4, 5 . . . . .	2,749 75	2	2,694 75	259 29	2,954 04
Tillson incubator cellar No. 1 . . . . .	713 50	2	699 23	21 36	720 59
Tillson summer sheds (3) No. 6 . . . . .	—	—	—	276 96	276 96
Tillson pullet brooder No. 7 . . . . .	—	—	—	1,091 26	1,091 26
Tillson Hen Brooder No. 8 . . . . .	—	—	—	1,174 46	1,174 46
	\$68,206 23		\$66,425 97	\$4,697 51	\$71,123 48

*Experiment Station Equipment.*Estimated  
Value.

Apiary . . . . .	\$147 56
Agricultural Economics Department . . . . .	415 92
Agricultural Laboratory . . . . .	8,824 48
Agronomy Department . . . . .	187 50
Botanical Laboratory . . . . .	7,368 83
Chemical Laboratory . . . . .	26,822 52
Cranberry Station . . . . .	3,868 58
Director's Office . . . . .	5,179 59
Entomological Laboratory . . . . .	24,325 70
Meteorological Laboratory . . . . .	778 00
Microbiological Laboratory . . . . .	3,256 45
Pomology . . . . .	4,582 72
Poultry Department . . . . .	6,987 90
Treasurer's Office . . . . .	982 67
Veterinary . . . . .	1,527 35
Total . . . . .	\$95,255 77

*Summary.*

Land . . . . .	\$144,938 08
College buildings . . . . .	1,241,867 49
College equipment . . . . .	776,750 41
Experiment Station buildings . . . . .	71,123 48
Experiment Station equipment . . . . .	95,255 77
Total . . . . .	\$2,329,935 23

Acres.

College estate (area) . . . . .	702.19
Cranberry Station, Wareham (area) . . . . .	23.67
Market Garden Field Station, Lexington (area) . . . . .	12.00
Mount Toby demonstration forest (area) . . . . .	755.27
Rifle range . . . . .	46.20
Pelham quarry . . . . .	50
Total acreage . . . . .	1,539.83
Cornelia Warren estate <sup>1</sup> . . . . .	50.00
	1,589.83

<sup>1</sup> This property was received from the trustees of the Cornelia Warren estate under date of March 29, 1923, but no appraisal made. The property being under lease until October 1, 1923.



## STUDENTS' TRUST FUND ACCOUNT.

	Disbursements, Year ending Nov. 30, 1923.	Receipts, Year ending Nov. 30, 1923.	Balance on Hand.	Balance brought forward Dec. 1, 1922.
Athletics . . . . .	\$22,183 70	\$21,486 94	—\$401 70	\$295 06
Dining Hall . . . . .	92,079 30	88,918 41	—3,117 62	43 27
Keys . . . . .	58 50	56 50	84 00	86 00
Students' deposits . . . . .	49,264 53	46,916 71	12,518 25	14,866 07
Social Union . . . . .	4,068 10	3,668 60	83 57	483 07
Textbooks . . . . .	9,706 01	9,948 33	1,322 54	1,080 22
Athletic Field . . . . .	—	—	169 70	169 70
Uniforms . . . . .	4,757 80	6,133 54	4,871 04	3,495 30
Cow-Testing . . . . .	18,513 92	18,508 22	2,214 64	2,220 34
Totals. . . . .	\$200,631 86	\$195,637 25	\$17,744 42	\$22,739 03
Balance beginning fiscal year. . . . .	—	22,739 03	—	—
Balance on hand Nov. 30, 1923 . . . . .	17,744 42	—	—	—
Totals. . . . .	\$218,376 28	\$218,376 28	—	—

## CONDENSED OPERATING STATEMENT OF THE DINING HALL.

	Operating Charges.	Income.
1922.		
Dec. 1, Balance . . . . .		\$43 27
1923.		
Nov. 30, Total Disbursements . . . . .	\$92,079 30	—
Outstanding bills . . . . .	2,992 17	—
Total collections . . . . .	—	88,918 41
Accounts outstanding . . . . .	—	1,465 17
Inventory . . . . .	—	8,139 32
Balance . . . . .	3,494 70	—
Totals. . . . .	\$98,566 17	\$98,566 17

ENDOWMENT FUND.<sup>1</sup>

	Principal.	Income.
United States grant (5 per cent) . . . . .	\$219,000 00	\$7,300 00
Commonwealth grant (3½ per cent). . . . .	142,000 00	3,313 32
		\$10,613 32

## BURNHAM EMERGENCY FUND 1923.

	Market Value Dec. 1, 1923.	Par Value.	Income.
Two bonds American Telephone and Telegraph Company 4s, at \$925 . . . . .	\$1,850 00	\$2,000 00	\$80 00
Two bonds Power Corporation of N. Y. 6½s at \$1,000 . . . . .	2,000 00	2,000 00	130 00
One United States Liberty Bond 4½s \$980 . . . . .	490 00	500 00	21 25
One bond Ohio Service Company 6s \$990 . . . . .	495 00	500 00	30 00
	\$4,835 00	\$5,000 00	\$261 25
Louisville Gas & Electric Company . . . . .	—	—	17 50
Western Electric Company . . . . .	—	—	49 72
Unexpected balance Dec. 1, 1922 . . . . .	—	—	492 06
	—	—	\$820 53
Extra expense in transfer of bonds . . . . .	—	—	30 47
	—	—	\$790 06
Disbursements for fiscal year ending Nov. 30, 1923 . . . . .	—	—	696 97
Cash on hand Nov. 30, 1923 . . . . .	—	—	\$93 09
Disbursements:			
Boys Camp . . . . .	\$30 19		
Legislature . . . . .	596 78		
Prizes . . . . .	70 00		
	\$696 97		

<sup>1</sup> This fund is in the hands of the State Treasurer, and the Massachusetts Agricultural College receives two-thirds of the income from the same.

## LIBRARY FUND.

	Market Value Dec. 1, 1923.	Par Value.	Income.
Five bonds New York Central & Hudson River Railroad Company 4s at \$890	\$4,450 00	\$5,000 00	\$200 00
Five bonds Lake Shore & Michigan Southern Railroad Company 4s at \$940.	4,700 00	5,000 00	200 00
Two shares New York Central & Hudson Railroad Company stock at \$104	208 00	200 00	12 00
Amherst Savings Bank, deposit.	167 77	167 77	7 59
	<u>\$9,525 77</u>	<u>\$10,367 77</u>	<u>\$419 59</u>
Disbursements for fiscal year Nov. 30, 1923	-	-	419 59

## SPECIAL FUNDS.

*Endowed Labor Fund (the Gift of a Friend of the College).*

Two bonds American Telephone and Telegraph Company 4s at \$925	\$1,850 00	\$2,000 00	\$80 00
Two bonds Lake Shore & Michigan Southern Railroad Company 4s at \$940	1,880 00	2,000 00	80 00
One bond New York Central Railroad Gold Debenture 4s	890 00	1,000 00	40 00
One Bond Ohio Service Company 6s	990 00	1,000 00	60 00
Amherst Savings Bank, deposit.	143 39	143 39	6 49
One United States Liberty Bond 4½s	980 00	1,000 00	42 50
	<u>\$6,733 39</u>	<u>\$7,143 39</u>	<u>\$308 99</u>
Unexpended balance Dec. 1, 1922	-	-	330 31
Louisville Gas & Electric Company	-	-	35 00
	-	-	<u>\$674 30</u>
Extra expense in transfer of bonds	-	-	9 67
Cash on hand Nov. 30, 1923	-	-	<u>\$664 63</u>

*Whiting Street Scholarship Fund.*

One bond New York Central Railroad Gold Debenture 4s	\$890 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit.	271 64	271 64	12 32
	<u>\$1,161 64</u>	<u>\$1,271 64</u>	<u>\$52 32</u>
Unexpended balance Dec. 1, 1923	-	-	555 65
Cash on hand Nov. 30, 1923	-	-	<u>\$607 97</u>

*Hills Fund.*

Two United States Liberty Bonds 4½ at \$980.	\$1,960 00	\$2,000 00	\$85 00
One bond American Telephone and Telegraph Company 4s at \$925	925 00	1,000 00	40 00
One bond New York Central & Hudson River Railroad Debentures, 4s at \$890	890 00	1,000 00	40 00
One bond New York Central Railroad Debenture 4s at \$900	900 00	1,000 00	40 00
Three bonds Pacific Telephone & Telegraph Company 5s at \$970	2,910 00	3,000 00	150 00
One Penn. Public Service Corporation 6s.	1,000 00	1,000 00	60 00
Boston & Albany Railroad Stock 3 5/8 shares at \$150.	544 00	362 00	31 68
Amherst Savings Bank, deposit.	72 75	72 75	3 28
Electric Securities Company bonds 1 9/50 bonds at \$950	1,121 00	1,180 00	59 00
Two bonds Great Western Light & Power Company 6s at \$1000	2,000 00	2,000 00	120 00
	<u>\$12,322 75</u>	<u>\$12,614 75</u>	<u>\$628 96</u>
Unexpended balance Dec. 1, 1922	-	-	1,918 82
Louisville Gas & Electric Company	-	-	70 00
Western Electric Company.	-	-	24 86
	-	-	<u>\$2,642 64</u>
Extra expense in transfer of bonds	-	-	26 17
	-	-	<u>\$2,616 47</u>
Disbursements for fiscal year ending Nov. 30, 1923	-	-	276 99
Cash on hand Nov. 30, 1923	-	-	<u>\$2,339 48</u>

*Mary Robinson Fund.*

Amherst Savings Bank deposit	\$142 00	\$142 00	\$6 45
Boston & Albany Railroad stock, 3/8 share at \$150	56 00	38 00	3 32
Electric Securities Company bonds 41/50 bond at \$950	779 00	820 00	41 00
	<u>\$977 00</u>	<u>\$1,000 00</u>	<u>\$50 77</u>
Unexpended balance Dec. 1, 1922	-	-	444 61
	-	-	<u>\$495 38</u>
Disbursements for loans made to students from the D. K. Bangs fund and unpaid	-	-	305 00
Cash on hand Nov. 30, 1923	-	-	<u>\$190 38</u>

*Grinnell Prize Fund.*

	Market Value Dec. 1, 1923.	Par Value.	Income.
Ten Shares New York Central & Hudson River Railroad stock at \$104	\$1,040 00	\$1,000 00	\$60 00
Unexpended balance Dec. 1, 1922	—	—	245 74
	<hr/> \$1,040 00	<hr/> \$1,000 00	<hr/> \$305 74
Disbursements for Prizes	—	—	50 00
Cash on hand Nov. 30, 1923	—	—	\$255 74

*Students' Loan Fund of the Massachusetts Agricultural Club.*

First National Bank	\$500 00	\$500 00	—
Total Loans to students	—	300 00	—
	<hr/> —	<hr/> —	<hr/> \$200 00
Amount of Loans paid by students	—	—	50 00
Balance on hand Nov. 30, 1923.	—	—	\$250 00

*Gassett Scholarship.*

One bond New York Central & Hudson River Debenture 4s at \$890	\$890 00	\$1,000 00	\$40 00
Amherst Savings Bank Deposit.	11 64	11 64	48
	<hr/> \$901 64	<hr/> \$1,011 64	<hr/> \$40 48
Unexpended balance Dec. 1, 1922	—	—	425 78
Cash on hand Nov. 30, 1923	—	—	\$466 26

*Massachusetts Agricultural College (Investment).*

One share New York Central & Hudson River Railroad stock	\$104 00	\$100 00	\$6 00
Unexpended balance Dec. 1, 1922	—	—	110 45
Cash on hand Nov. 30, 1923	—	—	\$116 45

*Danforth Keyes Bangs Fund.*

Two bonds Pacific Telephone and Telegraph Company 5s at \$970	\$1,940 00	\$2,000 00	\$100 00
Two bonds Union Electric Light and Power Company 5s at \$940	1,880 00	2,000 00	100 00
Two bonds American Telephone and Telegraph Company 4s at \$925	1,850 00	2,000 00	80 00
One United States Liberty Bond 4½s	980 00	1,000 00	42 50
Interest from student loans	—	—	117 41
	<hr/> \$6,650 00	<hr/> \$7,000 00	<hr/> \$439 91
Overdraft Dec. 1, 1922	—	—	—12 35
	<hr/> —	<hr/> —	<hr/> \$427 56
Total loans made to students during fiscal year \$2,670.00	—	—	—
Cash received on account of students loans \$3,615.00	—	—	—
Excess of cash received over loans made	—	—	945 00
Cash on hand Nov. 30, 1923	—	—	\$1,372 56

*John C. Cutter Fund.*

One bond Pacific Telephone & Telegraph Co. 5s	\$970 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1922	—	—	66 43
	<hr/> \$970 00	<hr/> \$1,000 00	<hr/> \$116 43
Disbursements for fiscal year ending Nov. 30, 1923	—	—	44 60
Cash on hand Nov. 30, 1923	—	—	\$71 83

*William R. Sessions Fund.*

One bond New York Central & Hudson River Railroad 6s at \$1,050.	\$525 00	\$500 00	\$30 00
Three United States Liberty Bonds, two at \$1,000 and one at \$500, 4½ at \$980	2,450 00	2,500 00	106 25
One bond Adirondack Light & Power Company 6s	990 00	1,000 00	60 00
One bond Southern Illinois Light & Power Company 6s	990 00	1,000 00	60 00
	<hr/> \$4,955 00	<hr/> \$5,000 00	<hr/> \$256 25
Unexpended balance Dec. 1, 1922	—	—	340 06
	<hr/> —	<hr/> —	<hr/> \$596 31
Disbursements for fiscal year ending Nov. 30, 1923	—	—	527 15
Cash on hand Nov. 30, 1923	—	—	\$69 16

*Alvord Dairy Scholarship Fund.*

	Market Value Dec. 1, 1923.	Par Value.	Income.
One United States Liberty Bond 4½	\$980 00	\$1,000 00	\$42 50
One bond Southern Illinois Light & Power Company 7s	1,020 00	1,000 00	70 00
Two bonds Great Western Power Company 6s at \$1,000	2,000 00	2,000 00	120 00
	<hr/>	<hr/>	<hr/>
Unexpended balance Dec. 1, 1922	\$4,000 00	\$4,000 00	\$232 50
	<hr/>	<hr/>	<hr/>
	—	—	1,160 11
Disbursements for fiscal year ending Nov. 30, 1923	—	—	\$1,392 61
	<hr/>	<hr/>	<hr/>
	—	—	150 00
Cash on hand Nov. 30, 1923	—	—	\$1,242 61

*J. D. W. French Fund.*

Two bonds Southern Illinois Light & Power Company 6s at \$990	\$1,980 00	\$2,000 00	—
Two bonds Great Western Light & Power Company 6s at \$1,000	2,000 00	2,000 00	\$60 00
Four bonds Penn. Public Service Corporation 6s at \$1,000	4,000 00	4,000 00	35 00
Two bonds Ohio Service Company 6s at \$990	1,980 00	2,000 00	60 00
	<hr/>	<hr/>	<hr/>
Balance of income on hand.	\$9,960 00	\$10,000 00	\$155 00
	<hr/>	<hr/>	<hr/>
	—	—	667 70
Expense of purchasing bonds	—	—	\$822 70
	<hr/>	<hr/>	<hr/>
	—	—	45 56
Disbursements for fiscal year ending Nov. 30, 1923	—	—	\$777 14
	<hr/>	<hr/>	<hr/>
	—	—	30 75
Cash on hand Nov. 30, 1923	—	—	\$746 39

SUMMARY OF BALANCE ON HAND OF THE INCOME FROM FUNDS HELD IN TRUST  
BY THE M. A. C.

Burnham Emergency Fund	\$93 09
Endowed Labor Fund	664 63
Whiting Street Scholarship Fund	607 97
Hills Fund	2,339 48
Mary Robinson Fund	190 38
Grinnell Prize Fund	255 74
Gassett Scholarship Fund	466 26
Massachusetts Agricultural College — Investment Fund	116 45
Danforth Keyes Bangs Fund	1,372 56
John C. Cutter Fund	71 83
William R. Sessions Fund	69 16
Alvord Dairy Scholarship Fund	1,242 61
Massachusetts Agricultural Club Fund	250 00
J. D. W. French Fund	746 39
	<hr/>
	\$8,486 55
	<hr/>
	250 00
	<hr/>
	\$8,236 55

I hereby certify that I have this day examined the Massachusetts Agricultural College Account, as reported by the Treasurer, Fred C. Kenney, for the year ending November 30, 1923. All bonds and investments are as represented in the Treasurer's report. All disbursements are properly vouched for, and all cash balances are found to be correct.

CHARLES A. GLEASON,  
Auditor.

JAN. 2, 1924.

## HISTORY OF SPECIAL FUNDS.

*Burnham Emergency Fund.* — A bequest of \$5,000. from T. O. H. P. Burnham of Boston made without any conditions. The Trustees of the College have used this fund in any cases of emergency where funds were not available. At present



the fund is intact and the income only has been used for such emergency matters as the Trustees have authorized. The fund now shows an investment of \$5,000.00.

*Library Fund.* — The library of the college at the present time contains 71,349 volumes. The income from the fund raised by the alumni and others is devoted to its increase, and additions are made from time to time as the needs of the different departments require. Dec. 27, 1883, William Knowlton gave \$2,000; Jan. 1, 1894, Charles L. Flint gave \$1,000; in 1887, Elizus Smith of Lee, Mass., gave \$1,315. These were the largest bequests and now amount to \$10,000.00.

*Endowed Labor Fund.* — Gift of a friend of the college in 1901, income of which is to be used for the assistance of needy and deserving students, \$5,000.00.

*Whiting Street Scholarship Fund.* — Gift of Whiting Street of Northampton, for no special purpose, but to be invested and the income used. This fund is now used exclusively for scholarship, \$1,000.00.

*Hills Fund.* — Gift of Leonard M. and Henry F. Hills of Amherst, Mass., in 1867, to establish and maintain a botanic garden, \$10,000.00.

*Mary Robinson Fund.* — Gift of Miss Mary Robinson of Medfield, in 1874, for scholarship, \$1,000.00.

*Grinnell Prize Fund.* — Gift of Hon. Wm. Claflin, to be known as the Grinnell agricultural prize, to be given to the two members of the graduating class who may pass the best oral and written examination in theory and practice of agriculture, given in honor of George B. Grinnell of New York, \$1,000.00.

*Gassett Scholarship Fund.* — Gift of Henry Gassett of Boston, the income to be used for scholarship, \$1,000.00.

*Massachusetts Agricultural College Investment Fund.* — Investment made by vote of trustees in 1893 to purchase one share of New York Central & Hudson River Railroad stock. The income from this fund has been allowed to accumulate, \$100.00.

*Danforth Keyes Bangs Fund.* — Gift of Louisa A. Baker of Amherst, Mass., April 14, 1909, the income thereof to be used annually in aiding poor, industrious, and deserving students to obtain an education in said college, \$6,000.00.

*John C. Cutter Fund.* — Gift of Dr. John C. Cutter of Worcester, Mass., an alumnus of the college, who died in August, 1909, to be invested by the trustees, and the income to be annually used for the purchase of books on hygiene, \$1,000.00.

*Alvord Dairy Scholarship Fund.* — Gift of Henry E. Alvord, who was the first instructor in military tactics, 1869–71, and a professor of agriculture, 1885–87, at this institution. The income of this fund is to be applied to the support of any worthy student of said college, graduate or postgraduate, who may be making a specialty of the study of dairy husbandry (broadly considered) with the intention of becoming an investigator, teacher or special practitioner in connection with the dairy industry, provided that no benefits arising from such fund shall at any time be applied to any person who then uses tobacco in any form, or fermented or spirituous beverages, or is known to have done so within one year next preceding, \$4,000.00.

*William R. Sessions Fund.* — In accordance with the request of my deceased wife, Clara Markham Sessions, made in her last will, I bequeath to the trustees of the Massachusetts Agricultural College, Amherst, Mass., the sum of \$5,000, it being the amount received by me from the estate of the said Clara Markham Sessions. The said \$5,000 to be kept by the said trustees a perpetual fund, the income from which shall be for the use of the Massachusetts Agricultural College; and according to the further request of my deceased wife; made in her last will, this is to be known as the William R. Sessions fund, and is to be a memorial of William R. Sessions; and it is my special request that the said trustees shall make record of the fact that this fund came from the estate of my deceased wife Clara Markham Sessions, in accordance with her request made in her last will, \$5,000.00.

*J. D. W. French Fund.* — The Bay State Agricultural Society gives to the trustees of the Massachusetts Agricultural College the sum of \$10,000. and some \$500. of accumulated interest, to be held by them and to be known as the J. D. W. French Fund. It is our desire as Mr. French was especially interested in Dairying and Forestry that the trustees use the income from this fund, so that in their judgment

it will do the greatest good to students in dairying and its allies, also Forestry, either as scholarships, loans, or prizes. We should prefer, however, that when it seems most advisable, the income be used to help pay the expense of a judging team to go from the Massachusetts Agricultural College to the National Dairy Show or National Livestock Show. Nathaniel I. Bowditch, Sec. & Treas., BAY STATE AGRICULTURAL SOCIETY. June 27, 1922. \$10,000.00.

*Massachusetts Agricultural College Fund.* — The Massachusetts Agricultural Club gave \$500. to be used as a scholarship fund to the Massachusetts Agricultural College to help out deserving students there, who intended seriously to go into agriculture, interest on loans not to be charged until after graduation, \$500.00.

Total of special funds, \$60,600.00.

FRED C. KENNEY, *Treasurer.*

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# THE M. A. C. BULLETIN AMHERST, MASSACHUSETTS

VOLUME XVII FEBRUARY, 1925 NUMBER 2

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OFFICE, AMHERST, MASS., AS SECOND CLASS MATTER

## THE SIXTY-SECOND ANNUAL REPORT OF THE MASSACHUSETTS AGRICULTURAL COLLEGE

ISSUED IN ACCORDANCE WITH SECTION 8, CHAPTER 75, OF THE GENERAL LAWS

PART I.—THE REPORT OF THE PRESIDENT  
AND OTHER OFFICERS OF ADMINISTRATION  
FOR THE FISCAL YEAR ENDED NOV. 30, 1924



PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE

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DEPARTMENT OF EDUCATION  
THE COMMONWEALTH OF MASSACHUSETTS

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PAYSON SMITH, *Commissioner of Education.*

EDWARD M. LEWIS, *Acting President of Massachusetts Agricultural College.*



# MASSACHUSETTS AGRICULTURAL COLLEGE.

## PRESIDENT'S REPORT, 1924.

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### REVIEW OF THE YEAR.

#### Trustee Changes.

On June 17 last, the College received the sad news of the death of Mr. Elmer D. Howe at his home in Marlborough, Mass. Mr. Howe was born in Marlborough September 10, 1860, and was appointed Trustee by Governor William E. Russell in January, 1893, to succeed Thomas P. Root of Barre. He served continuously as Trustee until his death. He was a member of the Committee on Course of Study and Faculty since 1893, of the Committee on Farm and Horticulture (later Horticulture) since 1895, and of the Committee on Extension Service, of which he was Chairman, since 1914.

Mr. Howe was a graduate of the college in the class of 1881 and soon after graduation came to be recognized as one of the foremost agricultural leaders of the State. His life was wholly spent on the farm and the record shows that he was an excellent and successful farmer. Though always a very busy man he gladly found time to devote to the solution of many of the vital problems pertaining to the welfare of Massachusetts agriculture. He was potent in promoting the organization of the Grange in this State and subsequently was honored as its leader. Indeed, he was really interested in every movement aiming at the co-operative welfare of farmers and in his later years gave active support to the Farm Bureau movement. Mr. Howe was a kindly, patient, tender gentleman of the old school who commanded respect wherever he went. He loved the College and gave to it an affectionate and faithful service. His loss will be keenly felt by us all for a long time.

The Trustees have placed on record the following resolutions:

*"Whereas, The Divine Master has seen fit to remove from this life Elmer D. Howe who for years has served faithfully and well as a Trustee of this College, giving of his time and energy that the best interests of agriculture in our Commonwealth should be advanced by agricultural education; therefore, be it*

*"Resolved, That the Board of Trustees of the Massachusetts Agricultural College mourn the loss of a sincere, courteous gentleman, with whom it was ever a pleasure to work, who always had the courage of his convictions, and who always had the best interests of the College at heart;*

*"Resolved, further, That a copy of these resolutions be sent to the family of the deceased and a copy placed upon our records."*

On September 3, 1924, the Governor's Council approved the appointment of Mr. John Chandler of Sterling Junction as Trustee of the College to fill the vacancy caused by the death of Mr. Howe. Mr. Chandler is a graduate of Yale, and a successful farmer. For years he has been an active leader in various agricultural organizations; at present he is President of the Massachusetts Farm Bureau Federation.

#### Resignations, Retirements, and Deaths.

KENYON L. BUTTERFIELD.

The year 1924 will ever stand out, in the history of the Massachusetts Agricultural College, as the year which marked the close of the brilliant administration of Kenyon Leech Butterfield, the seventh president of the institution. As you

already know, President Butterfield resigned in May in order to accept the honored leadership of the Michigan Agricultural College — his Alma Mater, and brought his labors here to a close the following August. Elected to the presidency at the age of thirty-eight he gave to this institution, therefore, the very best years of his life, and during that long period he strove earnestly and at all times to promote its highest good with unswerving fidelity and singleness of purpose. His administration was characterized by great wisdom, untiring energy, fine idealism and rapid and continuous expansion both in service and in influence.

President Butterfield entered upon his duties at the Massachusetts Agricultural College with the clearly defined and openly avowed purpose of maintaining and developing a high grade agricultural college. The institution, as he conceived it, should teach and study the fundamental sciences underlying the agricultural industry, train skillful farmers, educate leaders in the various agricultural professions, disseminate information concerning agriculture and the farm home to the people of the State, and in every way promote every interest of the countryside and country life. Under him the work of agricultural research was heartily encouraged; the curriculum of the four-year course was expanded; graduate courses were organized; short courses were established; and a comprehensive system of extension service was developed.

His achievements and success were due to a broad understanding of the problem of agriculture in its every phase; a rare capacity in the organization of projects and plans; the ability to discover and enlist capable associates for the work to be accomplished, and to inspire their best efforts and co-operation in its successful attainment.

Besides remarkable gifts of leadership, President Butterfield possessed unusual powers of prevision. He was one of the first to advocate a scheme of popular dissemination of agricultural information. His pioneer spirit anticipated the nation-wide Extension Service. He was one of the first to see the problem of the farmer as inevitably concerned with distribution as well as with production. His foresight saw the rural problem as essentially a human problem and the social conditions of the rural people to be a prime and essential factor in maintaining a satisfying agriculture and rural life. In recent years he was defining the scope of the agricultural colleges as embracing the entire field of food supply, including production, distribution, consumption and preservation.

His abilities were early recognized, and gradually opened for him the door of a nation-wide service. In 1908 he was named as a representative of the State of Massachusetts to the White House conference in Washington to consider the problem of national conservation. In 1908, also, he was appointed by President Roosevelt as a member of the Country Life Commission. Associated with him were Gifford Pinchot, Liberty Hyde Bailey, and the late Henry Wallace, the late Walter Hines Page, C. S. Barnett, and W. A. Beard. In 1913 Woodrow Wilson appointed President Butterfield as a member of the American Commission on Rural Credits which spent four months in Europe making a careful study of agricultural credit and co-operation. In 1918 he was elected by the International Y. M. C. A. to take charge of the organization of vocational education among the American troops in France. In 1921 a commission was organized to visit China for the purpose of making a comprehensive study of her educational needs and of reporting a desirable educational program for that vast Empire. President Butterfield served on this Commission as the expert in vocational education.

We are too close to the administration and work of our recent leader to be able adequately to evaluate the character and magnitude of his contribution. Future historians will accord him, we may predict, a very high place in the list of the real leaders and pioneers of American agriculture and of American country life. All we can do at this time is to express simple and sincere gratitude, and to affirm with pride that Kenyon L. Butterfield was a man of broadest vision and of outstanding leadership — a wise administrator and builder — a gentleman of rare personal charm, of unbending moral convictions, and of highest ideals, who gave the unusual powers and energies of his best years joyously and unreservedly to the great cause of agriculture and to the education of the youth and people of Massachusetts.



## PHILIP BEVIER HASBROUCK.

On a beautiful summer morning last July our College community was shocked by the sad announcement of the sudden death of Professor P. B. Hasbrouck. He had been troubled during the past four or five years with a weakened heart. His spirit was such, however, that we lived in the hope that he would regain his strength and health once again. But it was not to be.

Professor Hasbrouck was born in Libertyville, Ulster County, New York, in 1870. He was graduated from Rutgers in 1893, having specialized in mathematics, physics, and civil engineering. He came to M. A. C. in 1895 as Assistant Professor of Mathematics. He was made Associate Professor of Mathematics and Adjunct Professor of Physics in 1903 and Professor of Physics and Head of Department in 1911. In 1905 he was appointed Registrar of the College.

In the death of Professor Philip Bevier Hasbrouck the College has lost a servant who possessed the qualities of a teacher in a marked degree. Scores of men who studied under him freely acknowledge and gratefully remember the devotion which was given so gladly and generously. In his capacities of teacher and registrar Professor Hasbrouck's opportunities for meeting students were many and frequent. In spite of his often brusque demeanor most of his students became his staunch friends and held him in highest esteem. So also did his colleagues, and all who saw beneath the exterior the sincerity of purpose and big heart of the man. Few men on any faculty are privileged to be so generally beloved. His death brought a heavy pang to many friends and closed a life wholly dedicated through many years to the service of the College and of "the boys."

## JOHN PHELAN.

On August 31, 1924, John Phelan resigned to accept a position of larger responsibility under President Butterfield at the Michigan Agricultural College.

Professor Phelan came to the Massachusetts Agricultural College in 1915 as Professor and Head of the Department of Rural Sociology. He was an excellent teacher and attracted to his courses a comparatively large number of students. In 1918 he was appointed Director of Short Courses. In this position he rendered an outstanding service to the College. It was given to him to organize a two-year course in practical agriculture, in response to a legislative resolution that such should be established. In formulating this course Director Phelan introduced the feature of six months' practical farm experience, on approved farms under supervision; this training period comes between the first and second years of school work and must be satisfactorily completed before the student may graduate. Under his direction the winter school and the summer school were developed and enlarged in scope and new courses to meet special demands were established, notably short courses for florists, gardeners, and dairymen.

Immediately after the Armistice in 1918, the College announced its availability to train men discharged from the Army and Navy. Short courses were at once arranged and the registration was large from the first. Later M. A. C. was designated as the training center for New England to which disabled service men should be sent for rehabilitation in agriculture. Upon Director Phelan was placed the responsibility of organizing the many courses necessary to meet the varied requirements of such men. Over 650 Federal Board men have attended the College since 1919, and about 100 of them are still under the supervision of the Short Course organization. Through the Short Course as developed during the five years of Professor Phelan's leadership the usefulness of the College to the farmers of the State was significantly multiplied.

## HENRY S. GREEN.

After approximately three years of excellent service, Dr. Henry S. Green retired as Librarian November 12, 1924, having at that time reached the age limit.

## New Appointments of Department Heads.

BASIL B. WOOD.

Upon the resignation of Dr. Green, Basil B. Wood was appointed Librarian of the College. Mr. Wood was for the past four years librarian at the Westerly, Rhode Island, Public Library. Previously he had served at the John Crerar Public Library in Chicago; at the Berkshire Athenæum in Pittsfield; at the Springfield City Library, and in the Army Camp Libraries at Camp Gordon and at Camp Lee. Mr. Wood is a graduate of Brown University in the class of 1905.

ROLAND H. VERBECK.

On September 19, 1924, Roland H. Verbeck was appointed Director of Short Courses to succeed Professor John Phelan. Mr. Verbeck was graduated from M. A. C. in 1908, having specialized in Agricultural Education. He served first as Principal of the High School at Petersham and subsequently as Principal at Parsonsfield, Maine. Prior to the war he pursued graduate study at Harvard University. In the summer of 1917 he enlisted in the air service of the United States Army and served a year in France. From 1919 till June, 1924, he served with marked success as Director of the School of Agriculture at Saint Lawrence University, Canton, New York.

## Improvements and New Construction.

The buildings under construction and the improvements that have been made during 1924 are as follows:

1. The completion of the Chemistry Building at a cost of \$300,000.
2. The addition to the Rural Engineering Building at a cost of \$15,000.
3. The erection of the tobacco barn, \$3,000.
4. The erection of the head-house at the Agronomy Greenhouse, \$2,650.
5. Continuing the concrete walk, \$1,000.
6. Numerous other improvements, such as the repairs to the East Experiment Station Greenhouse and the Agricultural Greenhouse.

## Commencement, 1924.

At the commencement exercises held June 19, 1924, eighty-six B.S. degrees were awarded, eighty-two to men and four to women. The Degree of Bachelor of Vocational Agriculture was conferred upon one student who had entered from the Norfolk County School of Agriculture and had completed four years of undergraduate work on the basis of a modified program. The Degree of Master of Science was conferred upon four men, the Degree of Master of Landscape Architecture upon one, and the Degree of Doctor of Philosophy upon one.

The Commencement address was delivered by President Kenyon L. Butterfield upon the topic "Facing the Future." This was the final official appearance of President Butterfield before the College he so dearly loved.

## Enrollment of Students.

The enrollment of students in the four-year course this autumn is 489, an increase of 56 over a year ago. This increase is due to the larger freshman class which this year numbers 183 as compared with 125 in 1923. This year's freshman class has substantially the same enrollment as had the class entering two years ago. The total enrolled in work of college grade including graduate and special students is 571, an increase of 60 over the enrollment of 1923.

Owing to the small class entering the two-year course in 1923, the total enrollment this year in that course is slightly less than that of a year ago although the number entering the first year class in 1924 increased by 14 over the enrollment of the preceding year. The total enrollment in 1924 is 164 as compared with 173 in 1923.



## Work in Home Economics.

Since 1919 courses in home-making have been offered at M. A. C. The increasing interest in these courses, and the demand from the resident women students for additional work, together with urgent requests from many High School girls who have wished to pursue a major in Home Economics as part of their college work have steadily pointed towards the need for developing this work.

At the opening of the College year in September, 1924, more adequate provision was made for women students who wished to pursue a major in Home Economics. The emphasis is upon home-making as a fundamental vocation and will involve such courses as the study of clothing, its choice, cost, care and construction; the selection and preparation of food; nutrition and dietetics; the planning, furnishing and management of the home; the health of the family, including the care and health of children; and community relationships of the home. Thirty-one girls entered with the freshman class this autumn, and at present the total enrolled in the four-year course is 59. Some of these will undoubtedly wish to major in Home Economics and all of them will probably want to take more courses in the subject than was heretofore possible.

### Boys' Camp.

In 1924 for the second time a summer camp for boys was conducted. Both of the camps have been run along lines which result in a nominal net expense to the institution. The camp was directed by Mr. Richard A. Mellen, Field Agent of the College, assisted by student counsellors. The average weekly enrollment for each of the four weeks in 1924 was 20. The daily program included elementary instruction in various agricultural subjects. One serious handicap under which the camp operates is that it has no adequate facilities for swimming, and other water sports.

### Food Supply.

In recent years President Butterfield defined the scope of the agricultural colleges as that of embracing not only production and distribution of food but also its consumption and preservation. There was presented to the Legislature of 1924 a bill authorizing the appointment by the Governor, of a Commission which would study the questions of the Massachusetts Food Supply. Inasmuch as this bill had been introduced jointly by the College and the Department of Agriculture and had the support of various commercial organizations it was hoped that favorable consideration would be given it by the Legislature. The bill, however, was finally rejected. In the furtherance of this project numerous addresses were delivered during the year before Women's Clubs, Rotary Clubs, Chambers of Commerce, Granges, etc. Members of our staff who delivered addresses on the Massachusetts Food Supply and the number of them are as follows:

	No. of Lectures
President Kenyon L. Butterfield . . . . .	10
Dean Edward M. Lewis . . . . .	8
Director Sidney B. Haskell . . . . .	8
Director John D. Willard . . . . .	6
Professor A. E. Cance . . . . .	7
Professor John Phelan . . . . .	11
Dr. R. J. McFall . . . . .	1

### Gifts to the College.

During the year the College has been the recipient of several handsome gifts to be used for the promotion of scholarship and to assist needy students and farmers. They are:

#### 1. THE FREDERICK G. CRANE FUND.

The family of the late Frederick G. Crane of Dalton presented to the College a gift of \$25,000 to establish a fund in memory of Frederick G. Crane, the income therefrom to be expended by the Trustees in aid of worthy undergraduate four-year students of limited financial resources attending the College, preference being given to residents of Berkshire County.

The initial announcement concerning the distribution of this fund provides that all applications for loans or gifts from this fund shall be made to the President of the College, under whose direction an investigation will be made as to the relative merits of the applications. The purpose of this investigation will be to insure that the aid is extended to students whose parents are in such financial condition that assistance is necessary in order to insure a college education for the applicants; that it be extended only to students who propose to complete their college education at the Massachusetts Agricultural College; and that it be given only to those whose character and scholarship record justifies it.

Grants from the Crane Fund are made to freshmen in the form of loans supported by notes bearing endorsements satisfactory to the President of the College. These notes bear interest and are negotiable. The College, however, will at its discretion cancel these notes at the end of one year if the scholarship record of the student, his character, and his plans for the future appear to the President so to warrant.

Grants are made to sophomores either on the plan outlined for freshmen as given above or on the plan outlined for juniors and seniors as given below.

Grants to juniors and seniors are usually in the form of gifts and are awarded with consideration of the need, of the scholarship, and of the character of the applicant.

The amount of grants from this fund, made either as loans or as gifts, will be determined by the need of the applicant in each case and by the amount of money available in the fund.

## 2. SCHOLARSHIPS IN AGRICULTURE AND HORTICULTURE.

One thousand dollars have been provided by the Massachusetts Society for the Promotion of Agriculture to be awarded to four-year students enrolled from Massachusetts and majoring in the Divisions of Agriculture and Horticulture, for meeting their expenses at M. A. C. for the college year 1925-26. It has been decided that these prizes shall be awarded as follows:

Two scholarships of \$200 each to members of the class of 1927 who are majoring in the Division of Agriculture or Horticulture.

Two scholarships of \$300 each to members of the class of 1926 who are majoring in the Division of Agriculture or Horticulture.

In awarding these prizes, consideration will be given to

1. Excellence in scholarship in all subjects up to the time the awards are made.
2. Attitude toward work.
3. Personal character.

The scholarships will be awarded by a Committee consisting of the Head of the Division of Agriculture, the Head of the Division of Horticulture, and the President of the College.

These scholarships will be granted only as in the opinion of the Committee of award, the achievements of those eligible warrant the award.

## 3. THE PORTER L. NEWTON FUND.

The residue of the estate of the late Porter L. Newton of Waltham estimated to be approximately \$25,000 has been left to the Massachusetts Agricultural College for the purpose of establishing "a fund to be known as the Porter L. Newton Fund, the income of which is to be used by the administrative officers of said College as scholarships for the education of such citizens of the United States, as said Trustees may deem worthy and deserving of the same."

## 4. THE LOTTA CRABTREE FUND.

By the will of the late Lotta Crabtree the residue of her estate estimated at from \$1,000,000 to \$2,000,000 was left in trust for the benefit of graduates from the Massachusetts Agricultural College desiring to establish themselves in farming. This bequest will be administered by a separate board of Trustees appointed by

the Testator. Neither the exact amount of the bequest nor the conditions under which it shall be administered are as yet known.

These bequests disclose a growing interest in the Massachusetts Agricultural College by those who are making bequests for charitable and educational purposes.

### 5. SPECIAL PRIZE.

Last year the Trustees of the Frederick Cornelius Eldred Memorial Athletic Fund offered a prize of \$50 to that member of the Senior class of the College who should make the most constructive suggestions for the physical development of the student body with particular reference to the portion which does not participate in the major sports. The same prize is generously offered again for 1924-1925.

### Infirmary.

Director Marshall, who has charge of the Infirmary, reports that the present year has been very satisfactory from several standpoints. There has been less contagious illness than usual and the nurse and matron are doing their work most acceptably. Dr. Marshall repeats, however, with some emphasis, his statement of two years ago to the effect that our quarters are altogether inadequate not only to meet serious epidemic conditions but also to meet normal demands. The increasing number of women, necessitating separation facilities raises the question of enlarged quarters more seriously than ever. *I agree with him entirely that some action is very much needed.*

### Market-Garden Field Station.

The Market-Garden Field Station was established in 1916 as a branch of the Department of Market Gardening at the Massachusetts Agricultural College. Acting in co-operation and with the advice of the Boston Market Gardeners' Association a tract of twelve acres of land was bought in North Lexington upon which suitable greenhouses and service buildings were erected. The work was organized under the direction of Professor H. F. Thompson, then Head of the Department of Market Gardening, and was carried forward on the land in North Lexington until the late summer of 1924.

During the year 1923 an offer came from the estate of the late Cornelia Warren of Waltham through her executor proposing that certain land could be given to the Commonwealth for the use of the Massachusetts Agricultural College, either for the work in vegetable gardening or for other purposes. After much consultation authority was secured from the General Court to accept this gift with a view to the removal of the Market-Garden Field Station to the new site in Waltham.

The land in North Lexington with the buildings was sold in September, 1924, possession being given October 1, 1924, and the portable effects of the Field Station with its records and personnel was moved to the new location in Waltham.

Under authority given by the Legislature the funds (\$25,000) received from the sale of the North Lexington property have been used in providing new quarters on the land in Waltham. Certain of the old buildings which came with the property have been remodelled and adapted to their new uses and a new office building and greenhouse are being erected.

### Goessmann Laboratory.

The Goessmann Chemistry Laboratory was sufficiently near completion so that classes were scheduled there at the beginning of the fall term. It will be recalled that the Legislatures of 1922 and of 1923 appropriated \$300,000 for the construction and equipment of this building. The building was formally dedicated October 3, 1924. All the children of the late Dr. Goessmann were present. Representatives from educational institutions and a number of alumni of the College interested in Chemistry were guests of the College.

The following program was carried out:



Acting President EDWARD M. LEWIS, presiding.

The Building . . . . .	Dr. Joseph B. Lindsey, '83 Goessmann Professor of Agricultural Chemistry and Head of the Department.
Charles A. Goessmann (Chemist and Philosopher) .	Dr. Frederick Tuckerman '78 of Amherst.
Chemistry and Human Nutrition . . . . .	Dr. Thorne N. Carpenter '02 Nutrition Laboratory, Bos- ton; Carnegie Institution of Washington.
Chemistry and Agriculture . . . . .	Dr. Charles A. Browne, Chief, Bureau of Chemistry, United States Department of Agriculture.

**Mount Toby.**

There has recently been organized an Advisory Committee to co-operate with our Forestry Department in the development and management of the Mount Toby Demonstration Forest. The Committee selected consists of Mr. Andrew C. Warner, Sunderland, Mr. Walter D. Cowls, North Amherst, and Mr. Charles H. Beaman, Leverett.

**Recommendations for Legislation.**

Two amendments to existing laws affecting the college were laid before the Legislature of 1924. One proposed to reduce the tax levied for the inspection of feeds from \$20 to \$15. The reason given for the change was that the present tax is higher than is justified by the work done. The appropriation for this work in 1923 was \$9,000 and the income was \$19,420.

The second amendment sought to take from the Department of Administration and Finance the editorial supervision of research bulletins of the Massachusetts Agricultural Experiment Station.

Both of these bills were referred to the next General Court.

**MASSACHUSETTS AGRICULTURAL COLLEGE LEGISLATIVE BUDGET, 1925.**

**Projects for Permanent Improvement.**

**1. HORTICULTURAL MANUFACTURES BUILDING, \$60,000.**

The importance of utilizing various by-products of the farm which formerly were wasted, such as fruit and vegetables, was emphasized during the war, and under the direction of Prof. W. W. Chenoweth of this institution farmers came to see whereby this saving could to advantage be made permanent. In order to give adequate instruction in the preservation of fruit and vegetable products, a new laboratory building is essential. The plans provide for a one-story building of inexpensive construction, which will furnish laboratories for the various phases of this work.

The pressing need for this building is now generally understood. However, some of the principal considerations may be recapitulated as follows:

(a) The department of horticultural manufactures now has its work widely distributed in four buildings, viz., Flint Laboratory, Wilder Hall, French Hall, and a workshop on the hill near the cold storage plant. This wide scattering of the work is obviously very detrimental to its objective.

(b) The principal teaching is done at Flint Laboratory in rooms which were designed for use by the dairy department. The dairy department needs these rooms and would like to see the department of horticultural manufactures cared for elsewhere as soon as possible.



(c) The present quarters are entirely inadequate for the teaching work. On account of the limited space the department has been compelled to refuse admission to numbers of students. This is perhaps the only department in the institution which has been compelled frequently to refuse admission to students on account of lack of space. All the teaching could be much better organized and more efficiently conducted in a new building designed for this particular work.

(d) It is highly desirable that vigorous research work be undertaken at the earliest opportunity in the field of fruit and vegetable preservation and the manufacture of by-products. A strong demand exists for this work among fruit growers, but the subject is equally important to all consumers of food in Massachusetts.

(e) The department is now carrying on important extension work, but these extension projects need to be strongly supported by effective work at the college, and especially by well-directed research work.

(f) The Massachusetts Fruit Growers' Exchange Association, the Boston Market Gardeners' Association and other organizations have urgently requested this proposed building. This demand from the fruit growers and vegetable growers should be squarely met.

## 2. TUNNEL FROM POWER PLANT TO STOCKBRIDGE HALL, \$38,500.

The principal argument advanced in support of this project is the recommendation made by French and Hubbard, engineers, who recently made a study of the present heating plan and future development for the same, "that a tunnel be constructed to Flint Laboratory and Stockbridge Hall and the piping arranged so that exhaust steam can be used in these buildings. We are firm believers in tunnels for steam mains of this kind, and believe that when it is necessary to rearrange the underground piping, tunnels should be constructed. We would recommend this both for economy in the long run and on account of convenience in repairs and pipe insulation."

At present none of the underground steam lines are enclosed in tunnels. The result is a high cost of maintenance because of the excessive radiation and because of the difficulty in locating and repairing leaks. Also, at present, the maximum use is not made of exhaust steam; this latter difficulty would be met by the project here outlined.

## 3. WOMEN'S GYMNASIUM AND EQUIPMENT, \$16,450.

With the increased number of women students attending the College, the need of a women's gymnasium becomes imperative. With the appropriation here requested it is proposed to erect a wooden frame building adjacent to the present Women's Dormitory. Placed in this location it will be unnecessary to duplicate dressing rooms and shower baths. The amount requested will provide for the necessary equipment for the building.

## 4. ROADS AND WALKS, \$10,000.

In order to secure a system of improved roads and permanent walks on the campus, it is proposed to build small sections of each from year to year. In 1925 it is planned to extend the macadam road, provided in 1923, from the Chapel to the Power Plant, and to lay a granolithic walk from South College to the Drill Hall.

## 5. LIVING QUARTERS FOR FOREMAN AT TILLSON FARM, \$6,000.

Recently the barn cellar on the Tillson Farm was converted into an incubator cellar by repairing the walls and constructing a suitable roof. These repairs, however, have been partial and it is now proposed to raise the roof in order to provide a two-story building. The upper floor will furnish living quarters for the foreman and the main floor will be used as an experimental laboratory, egg room, operating room, office and shop. These improvements have already been delayed beyond the point of economy in operation.

## 6. EXTENSION OF PRESENT ENCLOSED ATHLETIC FIELD AREA, \$22,500.

It is proposed to extend in a southerly direction the present athletic field and to include in the enlarged area twelve tennis courts and two skating rinks, as well as to relocate the running track. The estimate covers the cost of extending the fences and grading and draining this area.

## 7. OTHER PERMANENT IMPROVEMENTS FOR ATHLETIC FIELD AREA, \$10,500.

This project is connected with that preceding and is intended to provide the permanent improvements for the enlarged field. The principal items are:

1. Piping water to the field for sprinkling, flooding, and drinking purposes.
2. Installing wire fencing for tennis courts.
3. Building walls for skating rinks.
4. Moving the quarter mile track.

## 8. TUNNEL TO FIRST PIT SOUTH OF POWER PLANT, \$4,615.

This project has been under consideration for several years but has not been pressed more urgently because of other demands. Its purpose is to provide for an underground system of steam piping for a distance of sixty feet from the wall of the power plant, extending to a point where the steam mains for the south side of the campus branch.

## 9. NEW STEAM LINE FROM EAST EXPERIMENT STATION TO MICROBIOLOGY BUILDING, \$4,705.

This project contemplates replacing a section of underground pipe line which is now in poor condition. The new line would be 385 feet shorter than the present one, thus effecting greater economy in operation.

## 10. LIVESTOCK REPLACEMENT, \$4,000.

In order to maintain satisfactorily the present pure bred strains of livestock including horses, cattle, sheep and swine, it is necessary to buy certain animals each year. The funds received from the sale of stock would be sufficient to maintain the inventory on a satisfactory basis. Under present conditions, however, it is necessary from time to time to seek special appropriations for this purpose. In 1925 the amount requested is \$4,000.

## 11. FENCING FRUIT PLANTATIONS, \$3,000.

The fruit plantations of the Horticultural Department are every year subject to serious raiding, besides the constant loss of fruit from visitors who stroll through the orchards and vineyards and help themselves to small quantities of fruit. An attempt has been made to prevent the raiding by patrolling the orchard. Loss due to the second cause cannot be stopped in this manner. It is believed that both types of loss can be largely prevented by fencing the main fruit plantations. The present estimate contemplates enclosing only such plantations as are now bearing fruit. Nine thousand linear feet of fence would be provided by the amount asked under this item.

## 12. CULVERT FOR BROOK IN RAVINE, \$2,505.

In order to provide adequate storage place for the large supply of coal which now has to be carried during part of the year, it is necessary to construct a culvert over a section of the stream which runs through the ravine adjacent to the Turbine House. The proposed culvert would be 175 feet long, four feet high and five feet wide, and can be constructed at an estimated cost of \$14.32 per linear foot.

## 13. REFRIGERATING PLANT AT PAIGE LABORATORY, \$2,000.

For years it has been impossible satisfactorily to maintain the animal and poultry disease specimens and to conserve the various kinds of diagnostic sera made in the Department of Veterinary Science and Animal Pathology. Two small re-

refrigerators which require daily icing are now used but are inadequate for the present demands. The addition proposed is necessary in order to save valuable perishable materials.

#### 14. ADDITIONAL LAND AT THE CRANBERRY STATION, EAST WAREHAM, \$1,000.

The total area of land, the purchase of which is contemplated by this item, is sixteen acres in the larger parcel; one acre, forty rods, in the smaller. The latter area is needed for the purpose of straightening the present boundary and preventing possible undesirable neighbors. The former area is required for three purposes, namely:

As source of sand for sanding the bogs.

Turf for building dams, dikes, and embankments.

An area of some eight acres, a part for enlargement of the blueberry plantation's work, another part for testing new varieties of cranberries, and engaging ultimately in formal breeding work.

### REPORT OF THE DEAN.

Much of the work of the Dean's office during the year just ended had to do with administrative matters of scholarship, schedule and student welfare.

From the very start every effort was made to have the new men begin right. To bring this about a new departure was taken this year through the introduction of a "Freshman Week." The schedule for this week was carefully planned with a view to introducing the entering student to his new environment in the shortest possible time with the least possible upset. Freshmen were asked to report three days ahead of the date set for the opening of college. This time was used for lectures on College Life, important college regulations, fraternities, scholarship, methods of study, campus employment and schedules. Mental tests, under the direction of the Department of Education, were also given during this period. These preliminaries were over when the members of the three other classes arrived on the campus for the formal opening of college, which came on Thursday afternoon. The time from the opening of college to the end of the week was given over entirely to class registration, lesson assignments and fraternity rushing. No rushing was permitted after this period. Accordingly, regular class work began the second week without any interference or loss of time.

All Freshmen were assigned to Advisers who acted as counselors and guides, and through whom almost personal attention was given to every new student. This advisory scheme, now in operation for a number of years, has given general satisfaction.

The advisory group this year was made up of the following members of the faculty chosen especially because of their sympathetic interest in students and their problems:

Halliday, Raymond.  
Julian, A. N.  
Lanphear, M. O.  
Machmer, Wm. L.  
Mackimmie, A. A.  
Moore, F. C.

Phillips, A. W.  
Porter, W. R.  
Rand, F. P.  
Rice, V. A.  
Yount, H. W.  
Skinner, Miss.

A preliminary scholarship report on all Freshmen was received in the Dean's Office at the end of the third week. This report helped to size up the men and enabled the advisers to work more effectively with their advisees. About three weeks later another more complete scholarship report was received. This report was mailed to the parent directly through the adviser. In this way co-operation between parent and adviser was established. This essential relation proved very helpful.

The Sophomores, Juniors and Seniors were almost entirely handled by the writer personally as far as scholarship was concerned. A complete report of their scholastic work was received from the instructors about six weeks after the open-



ing of each term. If this report was not satisfactory the student was called into personal conference. Good results followed from such conferences.

While the scholarship problem is still with us and undoubtedly ever will be, yet we feel that it is receiving careful and sympathetic attention and that as a result, our efforts in behalf of deserving students will become increasingly effective.

The regulation introduced last year withdrawing the cut privilege from Freshmen was, at the request of the Student Senate, extended to include the members of the Sophomore class. The two lower classes are now working under this system, which seems to meet with very general approval from both faculty and students.

Recognizing that college teaching can and ought to be better, a distinct beginning was made last winter to bring this about. A series of five teachers' meetings were held at intervals of two weeks to consider methods of teaching and ways and means for improving teaching practices at the Massachusetts Agricultural College. The meetings were in charge of members of the staff and were very suggestive and helpful.

The death of Professor Philip B. Hasbrouck, Registrar of the College since 1905, on July 19, 1924, threw a new duty on the writer, who was appointed Acting Registrar. This meant the handling of the Dean's and Registrar's work under one head. The undertaking was rather an ambitious one and has necessarily forced the adoption of a "carry on" policy. Outstanding new ventures could not be undertaken. The clerical force in both the Dean's and Registrar's Offices deserves great credit for its loyalty and willingness to carry added responsibilities.

The student morale was good. The finest spirit of whole-hearted co-operation was noticeable on every hand. Buoyed up by this undivided support we were able to carry rather easily the very numerous burdensome duties of an unusually exacting year.

WM. L. MACHMER,  
*Assistant Dean.*

### **REPORT OF THE DIRECTOR OF THE EXTENSION SERVICE.**

The year 1924 has seen the further development and carrying out of extension policies and plans which have been the basis of work in the past. Projects have been developing with each year's experience so that they are close to the needs of the farms and rural homes of the state. The underlying needs of agriculture and home-making must always be the starting point in our work. These have not changed materially during the year.

The agriculture of Massachusetts is, however, passing through an adjustment period. High prices during and immediately following the war enabled many inefficient farmers to make profits. Those days are over. Dairymen, poultrymen and market gardeners are finding it necessary to reduce the costs of production if there is to be a profit at the present market prices. Our service to them must be to enable them to reduce costs of production so that they can still compete with farmers in other areas who are selling in our markets. The successful low-cost producer still has good opportunity, but the day for the inefficient high-cost producer has gone. Readjustment is a bitter process to those who cannot make the changes, but it is inevitable. Fortunately, the majority seem to be finding ways of meeting changed conditions, and complaints come largely from those who do not yet sense the nature of the change. It is a matter of hopeful significance that Massachusetts producers see the futility of trying to raise prices by artificial means and are looking to careful management of their own farms for salvation.

The war brought greater spending power to the majority of city dwellers who at once converted this into ampler standards of living. Rural homes are not so easily provided with even the ordinary comforts which city populations enjoy. Educational assistance to country home-owners to make their homes as attractive and enjoyable as those in the city is much in demand. The call for educational service in clothing and textiles has grown beyond our capacity to meet it. With the filling of the vacancy in our staff, work in nutrition can again be resumed, and the time of the specialist is already booked for months to come.



Boys and girls remain in club work longer than formerly. This is evidence of a feeling that values received are greater. The out-of-the-way corners of the rural sections are being studied more carefully, and the opportunity for club activities is reaching those boys and girls who most need it.

The most important staff-change of the year has been the filling of the position of Extension Specialist in Nutrition, vacant since the summer of 1923. Miss Mildred L. Wood has taken up this work, coming from county and city extension work in Iowa and Minnesota, and from study in Teachers College, Columbia. It is a common observation that extension work in nutrition is less spectacular than in other branches, and appeals primarily to thoughtful home-makers who are conscious of the importance of diet in the family welfare. It is a project which cannot be reported in as vivid a manner as some others because it is not as susceptible to exhibit as others.

Professor H. F. Tompson resigned from the position of Extension Specialist in Vegetable Gardening in order to go into business, and was succeeded by Professor R. M. Koon, who came to us from Delaware. Professor Joseph F. Whitney resigned from the position of Extension Specialist in Landscape Gardening to undertake professional work with the Mariemont Company in Cincinnati, Ohio, and the position is still vacant. Miss Dorothy Murdock resigned from the position of Assistant State Leader of Junior Extension work in order to undertake the practice of home-making, and was succeeded by Miss Harriet M. Woodward, who came to us from home demonstration work in New Hampshire. Professor Frederick E. Cole resigned from the position of Extension Specialist in Pomology to become Manager of the Nashoba Fruit Growers, and was succeeded by Professor Wilbur H. Thies, who came to us from Michigan Agricultural College.

Much attention has been given to teaching methods, in order to reach the larger groups. We have found much demand from the more vigorous and progressive farmers and home-makers, but too often those who most needed to change their practices to survive under present competitive conditions were the slowest to sense the need. The year has marked progress in this effort. A more complete statement of this will be included in Part VI of the annual report of the Massachusetts Agricultural College.

In July the Extension Service issued a cautionary letter relative to the proposed New England Dairy System. It was felt that many farmers would be tempted to join it expecting monopoly profits and high prices. The era of high prices for milk in Massachusetts has passed. The prices of the future will be based on the reactions of supply and demand, as the actual net prices have been for the past few months. The warning from the College received very widespread publicity and much adverse criticism. It is perhaps sufficient to report that the bitterest critic of the College for its position is now advocating the very basic concept on which the warning was founded. It is our conviction that the warning, which was issued simultaneously and in the same form by the Director of Extension in Vermont, saved hundreds of thousands of dollars to the farmers of New England, and prevented the undertaking of a co-operative venture which was unsound in its initial plans. It should be noted, however, that the plans for the New England Dairy System have been revised, and in its ultimate form the organization has a chance to prove of substantial benefit to its members.

Relationships with co-operating agencies have been excellent, and during the year have been developed to better efficiency. This is true alike of the State Departments of Agriculture and Conservation, and with one exception of the County Extension Services.

The county extension organizations have maintained excellent effectiveness and morale. We believe more firmly than ever that a co-operative program of extension work which utilizes the college as a resource agency and the county staffs as the agencies for direct application is most effective. Supporting this is the United States Department of Agriculture, the largest resource organization as well as the largest research organization in the world.

Co-operation with commodity organizations is stronger than ever, with mutual benefit. Educational programs can be carried forward very effectively through the membership activities of such organizations. It is the plan and practice of the

Extension Service to look to such organizations for counsel on the basic needs of the industries which they represent.

We are under very great pressure for materials and leadership in the home-management project. The need of a full-time specialist in this field is urgent. It is to be hoped that the various budgetary and appropriating agencies can find a way to create this new position, which is the only one requested in our budget for the year 1925.

In summary, the year shows marked gain in teaching efficiency, in numbers reached, in understanding of underlying problems, and in the development of materials to meet needs. A detailed report on projects will be found in Part VI of the Report of the Massachusetts Agricultural College.

JOHN D. WILLARD,  
*Director of the Extension Service.*

## REPORT OF THE DIRECTOR OF THE EXPERIMENT STATION.

One of the economic lessons gained from the period of agricultural depression through which we are happily passing is that farmers in any given section are in competition with all other farmers who attempt to reach the same market. Massachusetts dairymen are in serious competition with the dairymen of Northern New England. Similarly the potato growers of Massachusetts must compete with those of Aroostook County, Maine; and unless they can place potatoes on the market at as low a cost as can their competitors naturally they will lose their market. With few exceptions, of which the Cape Cod cranberry is the most significant, the price at which our Massachusetts farmers must sell their products is determined by the total crop as produced in competing sections.

Self-evidently, it is impossible to confine to the borders of a single state the benefits of any agricultural research. Seldom can agricultural improvements be patented, or the methods of effecting such improvement be copyrighted. Such action, even if possible, would be undesirable, and not in the interests of public welfare. The results of all experiment station work regardless of where carried on are available to all farmers. Even though we must recognize this, it is nevertheless incumbent on the Massachusetts Station to direct its best efforts to bettering the competitive position of Massachusetts farmers. This it is attempting to do.

The branches of Station work in which distinct service is being rendered to Massachusetts agriculture as distinguished from competing agriculture, are shown in the following paragraphs:

1. *All Research Studies on Plant Diseases and Insect Enemies of Vegetation.*—Because of the fact that development of these obstacles to successful production is so profoundly affected by environment, this research work must be local. Work carried on during the year includes studies of the squash vine borer, the squash bug, the second generation of the codling moth, the hatching dates of a number of scale insects, study of insects affecting the cranberry, and control studies on the onion thrips. In plant diseases, study of carrot blight, of tobacco root rot, of cucumber mildew under glass, of scab and black rot of apples, of onion smut, and of tobacco wildfire are included in the year's operations, together with some co-operative study of certain cranberry diseases carried on jointly with the United States Department of Agriculture.

2. *Most Soil Management and Plant Nutrition Studies.*—These are mainly local in their application, even though the research may develop fundamental principles of wide application. The work of the year includes projects in soil management and fertilization of orchards, study of plant food relations in permanent pasture, and a new series of soil management studies for onions and tobacco. The net result of this work, when and as it is brought to successful completion, will be to better to a significant degree the competitive conditions under which our farmers work.

3. *Certain Studies in Animal Nutrition.*—The most significant at the present moment is investigation of substitutes for milk in the rearing of dairy calves. The situation in the Massachusetts dairy industry is one which puts a high value on



fluid milk, and which necessitates high producing cows in the dairy herd. The latter fact is favorable, the former highly unfavorable, to the breeding of high quality dairy cows. Apparently our Massachusetts farmers will not be able to replace their herds unless substitutes for milk be found. This project, however, when successfully completed, may develop fundamental principles of almost universal application.

4. *Local Studies on Markets and Marketing.* — The most important work of the year was study of costs of marketing Massachusetts apples. The object here was to give to the Massachusetts orchard industry the facts on which more economical operation may be based.

5. *Poultry Disease Studies, with Particular Reference to those Typical of Intensive Poultry Industry.* — The disease problem in congested regions differs significantly from that in other regions. This makes it necessary that the Station give good service in order that the industry may be maintained on a sound basis.

There are many other projects which have a much wider application. The work of the Department of Poultry Husbandry in breeding high egg laying strains of Rhode Island Reds illustrates the point. The increased economy which this high producing stock makes possible will be nearly as great an advantage to the competitors of Massachusetts poultrymen as to Massachusetts poultrymen themselves. Ultimately, of course, it can have but one result — to make possible the production of eggs at a lower cost than at present. Similarly, much of the study in agricultural economics, research on the properties of feeding stuffs, and fundamental studies in plant development are of ultimate fundamental significance to the people as a whole, rather than to any restricted group.

### **Demand versus Need for Research Work.**

The above brings out a most important point. Normally the ability of the Experiment Station to undertake research work in any line depends on apparent demand for the same. Practically the need for this research antedates the demand, even by a score of years. The most successful research is that which avoids trouble, rather than merely remedies it after it occurs. If the work established two years ago on certain problems incident to tobacco culture had been started twenty years ago; and if the work on white diarrhoea control of poultry could have been instituted before the disease became prevalent, the farming industry of Massachusetts would have been saved from great losses. This represents one of the difficult problems of Station administration — to secure funds in support of fundamental research for which there may be no apparent demand, but which may be the most productive research possible, on account of its anticipating future needs. The fact that Massachusetts has in general been astonishingly liberal in its appropriations to its Experiment Station is a cause both for gratification, and increased sense of responsibility to the tax payers of the State.

### **Conditions affecting Station Work.**

In the attempt to make the work of the Station apply most fully to the needs of Massachusetts, the fullest co-operation has been received from members of the Station staff. There is, however, a growing lack of contact between the Station men and those who should form the main clientele of the Station, — that is, the farmers of the State. This loss of contact is caused primarily by change in the character of the Station work, and secondarily by the fact that the Extension Service now serves as the liaison organization between the College and Massachusetts farmers. Further study needs to be given to the problem, for the fullest responsibility to the people of the State will not be obtained unless our workers are in contact with those requiring our research service.

Most of the conditions experienced during the year have been favorable. Great progress has been made in improving and equipping the various farm areas now available for Station work — the new Brooks Experimental Farm, the Harlow Farm for orchard experimental work, and the Tillson Farm for poultry breeding. The transfer of the Market Garden Field Station from North Lexington to Waltham gives to this branch of the institution greatly increased opportunities for effective

research. The increase of personnel at the Cranberry Station has likewise increased opportunities in its work.

Of unfavorable developments during the year there are two which are worthy of notice. The first is the very large turnover in the lower paid positions on the Station staff. The total of full time workers now in the service of the Station is forty-five. There were ten resignations during the course of the year, most of these being caused by dissatisfaction with the low salary schedule, coupled with the ability to find better opportunities elsewhere. This condition was reported to the Trustees in 1922. The second unfavorable condition is in the publication of results of research. Not for years has the Station had such a poor record. The conditions bringing about this unfavorable development are those described in my last annual report.

SIDNEY B. HASKELL,  
*Director of the Experiment Station.*

## REPORT OF THE DIRECTOR OF THE GRADUATE SCHOOL.

Agriculture is, by common consent, the noblest of the professions. To exalt it and to hold it in its proper place in the eyes of the world should be the goal of every individual genuinely interested. Those engaged in agriculture and especially the leaders, should have real pride in their calling. Moreover they should be broadly trained. They must meet other professional classes on the same footing; they must develop a culture equal to any profession, a standard of life accepted by all conditions of society, and a mentality that will reflect credit and be conspicuous in all callings in which they may participate. Such is the objective of graduate work in agriculture.

The school flourishes and is accomplishing much as measured comparatively with other graduate schools, but we seek to accomplish much more in an effort to realize the full significance of the goal set above. It is pertinent to know what is being done by our graduate students. This can in a very meagre way be illustrated by the theses submitted by the candidates for higher degrees last June.

Mr. Stanley B. Freeborn received the degree of Doctor of Philosophy. He presented a thesis on "The Mosquitoes of California." This study extended over several years. Mr. Freeborn is connected with the University of California. His study has universal application.

Mr. John G. Archibald received the degree of Master of Science and presented a thesis considering "The Digestibility of Treated Grain Hulls for Domestic Animals." This was an extensive study within the Experiment Station and aims to make available a wider range of animal foods.

Mr. Roland W. Rogers, receiving the degree of Master of Landscape Architecture, offered a thesis in which he has elaborated grounds and buildings for an agricultural school in Albania. This has been done in conjunction with and at the request of those responsible for the enterprise.

Mr. Raymond A. Mooney, receiving the degree of Master of Science, has made a study of those "Physical Properties of Fertilizer Materials" which are constantly annoying to individuals handling fertilizers.

Mr. Stanley W. Bromley received the degree of Master of Science and offered as a thesis a study of "The External Anatomy of the Horse Fly." Such a study furnishes a basis for applications in eradication.

Mr. Warren B. Mack, who is connected with Pennsylvania State College, was the recipient of the Master of Science degree. He contributed as a thesis a study of "The Growth and Bearing Habit of Apple Spurs." The purpose of this study was to gain some knowledge of the peculiar habits of apple bearing that are familiar to those raising apples.

Such work means much to agriculture. While it represents intensely specialized investigation, yet it is the only method of moving ahead in any particular field.

Of course it is impossible to present in this connection the studies of graduate students apart from the above aspect of their activities, for graduate work is largely individual and its procedures independent.

CHARLES E. MARSHALL,  
*Director of the Graduate School.*



## REPORT OF THE DIRECTOR OF SHORT COURSES.

The work of the short courses is being carried on along the lines developed by former Director Phelan, with few apparent adjustments required at present. This report must deal largely with results secured during his tenure of office, for the present director did not assume charge until late in September. It is a pleasure to record here the fine type of organization as to curriculum, student morale, administrative machinery, and instructors, which has been built up by my predecessor during the past seven years.

### Two-Year Course.

One cannot help feeling that a distinct educational opportunity has been provided with the development of the two-year short course. I believe it supplies a needed educational opportunity which, if broadly realized, will enable the College to constantly recruit the ranks of our agricultural population most directly. I say this because I do not view the decreasing enrollment figures in this course with alarm. In fact, with the Veterans' Bureau trainees no longer a contributing factor because of the practical completion of the government's rehabilitation program, we find the entering class this fall registers a slight increase. I am inclined to believe this year marks the ebb of the tide and while no great inflow should result, classes of a more normal size can be expected.

It is a source of much satisfaction to observe the capable work being performed by so many of the graduates in their various fields of occupation. Figures recently secured indicate that a large majority of the men and women, approximately eighty-six per cent, are actually engaged to-day in productive agricultural pursuits.

We have no slight problem to secure the right kind of summer training jobs for the students' practical work of six months in the freshman year. Ninety positions must be found for this year's class alone. Many of the best farmers in the state are assisting us in this program, not only by taking students to meet their labor requirements of the summer, but in a number of cases they find such men highly desirable for permanent positions after graduation. We plan to lay even greater stress on the practical training of the two-year students during this summer period, with the idea that students demonstrating a high standard of farm ability may offset minor class-room discrepancies. On the other hand a few students easily maintain good class grades, only to show little zeal, initiative, or skill in their farm training. No parent should expect the College to pass such men with its approval as vocationally trained in agriculture. They belong elsewhere in industry.

Mental tests given to the freshman group this year by the college department of education indicate a large percentage of the students have had much more than the minimum preparation required for the course. Arrangements were made for all male students to take the regular college physical examination, hitherto required only of members of athletic squads. This was conducted by Professor Curry S. Hicks, and the data secured has been helpful already in informing students of physical limitations, either chronic or corrective.

### *Tabulation of Students by Majors studied.*

Animal Husbandry, 47; Dairy Manufactures, 9; Floriculture, 19; Horticulture, 18; Pomology, 29; Poultry, 29; Vegetable Gardening, 9; General Women's Course, 5.

### *Two-Year Course Enrollment for the Past Five Years.*

1919, 209; 1920, 295; 1921, 302; 1922, 274; 1923, 169.

### Winter School.

A new short-course plan was put in operation by the Department of Floriculture to provide a more balanced training in flower-growing. It was planned to alternate this Florist School with a Nursery School, scheduled for the coming

year. Not enough students registered to make this possible. A special course in Fruit Growing will be given in the winter of 1925 which should prove of interest to the fruit men of the state. The two week units in Dairy Manufactures, including ice-cream making and milk testing continue to prove popular, providing a short intensive course of lessons. New unit courses in milk plant operation and milk inspection replace butter-making and market milk as offered last year.

### Summer School.

Collegiate credit for work taken in the summer school was given for the first time this year. This will undoubtedly interest many teachers of the state who wish to continue their professional training along lines of study we are excellently equipped to carry on. To many teachers of agriculture the new credit system will serve to meet state requirements for advanced study.

### Placement Training and Supervision.

For the Veterans' Bureau field work three men are still employed under government salary. This force is being reduced gradually as the federal training program for ex-service men approaches completion.

The many problems in placing two-year students for summer training are being handled by Mr. Paul W. Viets with tact and understanding. He is making many valuable contacts with agricultural organizations to secure the best possible places and achieve the maximum results for both student and farm operator.

ROLAND H. VERBECK,  
*Director of Short Courses.*

#### TABLE I. — NEW APPOINTMENTS.

##### *A. In the Academic Departments.*

Instructor in Physical Education: Lorin E. Ball, B.Sc., Massachusetts Agricultural College, 1921.

Instructor in Physical Education: Edward L. Bike, B.Sc., Massachusetts Agricultural College, 1924.

Assistant Professor of Landscape Gardening: Prentiss French, A.B., Williams, 1917; M.L.A., Harvard, 1921.

Instructor in French: Raymond Halliday, A.B., Brown, 1920.

Instructor in English: Belding F. Jackson, B.Sc., Massachusetts Agricultural College, 1922.

Instructor in Agronomy: Willard P. Jones, B.Sc., University of Wisconsin, 1923.

Assistant Professor of Home Economics: Helen Knowlton, A.B., Mt. Holyoke, 1903; A.M., Columbia, 1924.

Acting President: Edward M. Lewis, A.B., Williams, 1896; A.M., Williams, 1899.

Instructor in Microbiology: John B. Nelson, B.Sc., Massachusetts Agricultural College, 1917; A.M., Harvard, 1923; Ph.D., University of Missouri, 1924.

Assistant Professor of Poultry Husbandry: John W. Patton,<sup>1</sup> B.Sc., Cornell, 1911; D.V.M., Texas Agricultural and Mechanical College, 1921; M.Sc., Kansas State College, 1924.

Instructor in Chemistry: Arthur W. Phillips, B.Sc., Tufts, 1915; A.M., Harvard, 1921.

Instructor in Zoölogy: Gordon C. Ring, B.Sc., Wesleyan, 1923; A.M., Wesleyan, 1924.

Instructor in Farm Law: Harold W. Smart,<sup>1</sup> LL.B., Boston University, 1918.

Director of Short Courses: Roland H. Verbeck, B.Sc., Massachusetts Agricultural College, 1908.

Assistant Professor of Microbiology: Chester H. Werkman, B.S.A., Purdue, 1919; Ph.D., Iowa State College, 1923.

Librarian: Basil B. Wood, A.B., Brown, 1905.

<sup>1</sup> Temporary for one year.

*B. In the Experiment Station.*

Investigator in Botany: Theodore T. Ayers, B.Sc., Pennsylvania State College, 1924.

Investigator in Chemistry: Gerald M. Gilligan, B.Sc., Massachusetts Agricultural College, 1921.

Curator, Department of Botany: Gladys I. Miner.

*C. In the Control Service.*

Specialist in Poultry Disease Elimination: Patrick E. Bransfield, B.A., Wesleyan, 1912.

Analyst: George B. Dalrymple.

Technical Assistant: James J. McDermott.

Analyst: Alice H. Norcross.

*D. In the Extension Service.*

Extension Professor of Farm Management: Fayette H. Branch, B.Sc., Cornell 1914.

Extension Editor: John A. Crawford, B.Sc., Massachusetts Agricultural College, 1920.

Extension Professor of Vegetable Gardening: Ray M. Koon, B.Sc., Pennsylvania State College, 1914; M.Sc., University of Delaware, 1923.

Assistant Extension Professor of Pomology: Wilbur H. Thies, B.Sc., Michigan Agricultural College, 1919.

Assistant Extension Professor of Nutrition: Mildred L. Wood, A.B., Rockford College, 1912.

Assistant State Club Leader: Harriet M. Woodward, B.Sc., Framingham Normal, School, 1922.

*E. Miscellaneous.*

Matron, Infirmary: Mrs. Mary Macrae.

Curator, Department of Chemistry: Ural V. Martin.

## TABLE II. — SPEAKERS FOR THE YEAR.

*A. Speakers at Assembly for the Year ending Nov. 30, 1924.***1923**

Dec. 6. Mr. Homer B. Hurlbert, Springfield.

Dec. 13. Mr. Ray Stannard Baker, Amherst.

**1924**

Jan. 2. Mr. Samuel T. Dana, Amherst.

Jan. 9. Mr. William G. Baxter, Hartford, Conn.

Jan. 16. Dr. Harry F. Ward, New York City.

Jan. 23. Mr. Henry Bond, Brattleboro, Vt.

Jan. 30. Prof. James W. Crook, Amherst.

Feb. 6. Prof. Irving Fisher, New Haven, Conn.

Feb. 13. Student Forum.

Feb. 20. Dean Edward M. Lewis, M. A. C.

Feb. 27. Freshman-Sophomore Debate.

Mar. 5. Prof. Thomas E. Elder, Mt. Hermon.

Mar. 19. President Ralph D. Hetzel, Durham, N. H.

Mar. 26. Mayor Edward J. Woodhouse, Northampton.

Apr. 2. Rev. Edwin B. Robinson, Holyoke.

Apr. 9. Prof. Robert Frost, Amherst.

Apr. 16. Dr. Charles F. Remer, Cambridge.

Apr. 23. Dr. Alfred Sze, China.

Apr. 30. Mr. Frank Morrison, Washington, D. C.

May 14. Student Forum.

May 21. Burnham Declamation Contest.

Sept. 17. Opening Assembly.



## 1924

- Sept. 25. Acting President Edward M. Lewis.  
 Oct. 2. Rev. Edwin B. Robinson, Holyoke.  
 Oct. 9. Hon. George D. Chamberlain, Springfield.  
 Oct. 16. Mr. Roland A. Gibson, New York City.  
 Oct. 23. Mayor Edward J. Woodhouse, Northampton.  
 Oct. 30. Mrs. Lucia Ames Mead, Brookline.  
 Nov. 6. Student Forum.  
 Nov. 13. Motion Pictures, Massachusetts Forestry Association.  
 Nov. 20. President George D. Olds, Amherst.

*B. Speakers at Sunday Chapel for Year Ending Nov. 30, 1924.*

## 1923

- Dec. 9. Dr. Samuel A. Eliot, Boston.  
 Dec. 16. Dr. B. H. Lockhart, Manchester, New Hampshire.

## 1924

- Jan. 6. Bishop Edwin H. Hughes, Malden.  
 Jan. 13. Rev. S. Ralph Harlow, Northampton.  
 Jan. 20. Rev. John Haynes Holmes, New York City.  
 Jan. 27. Rev. John C. Seymour, Holyoke.  
 Feb. 3. Mr. Alfred E. Stearns, Andover.  
 Feb. 10. Dr. D. Brewer Eddy, Boston.  
 Feb. 17. Rev. Barrett P. Tyler, Brookline.  
 Feb. 24. Dr. Sidney E. Goldstein, New York City.  
 Mar. 2. Rev. Alfred Grant Walton, Stamford, Conn.  
 Mar. 9. Rev. Marshall Dawson, Storrs, Conn.  
 Mar. 23. Rev. John Herman Randall, New York City.  
 Mar. 30. Rev. Frank W. Padelford, New York City.  
 Apr. 6. Pres. John M. Thomas, State College, Pa.  
 Apr. 13. Prof. Rufus M. Jones, Haverford, Pa.  
 Apr. 20. Rev. Nehemiah Boynton, New York City.  
 Apr. 27. Rev. John B. Hanna, M. A. C.  
 Nov. 2. Bishop Francis J. McConnell, Pittsburgh, Pa.  
 Nov. 9. Rev. John Howard Melish, Brooklyn, New York.  
 Nov. 16. Bishop Thomas F. Davies, Springfield, Mass.  
 Nov. 23. Rev. John Herman Randall, New York City.

TABLE III. — ATTENDANCE.

	REGISTRATION NOV. 1, 1923.			REGISTRATION NOV. 1, 1924.		
	Men.	Women.	Total.	Men.	Women.	Total.
<i>A. In Work of College Grade.</i>						
Graduate Students . . . . .	58	5	63	53	9	62
Senior Class . . . . .	87	7	94	79	4	83
Junior Class . . . . .	71	4	75	99	14	113
Sophomore Class . . . . .	120	17	137	100	10	110
Freshman Class . . . . .	112	13	125	152	31	183
Special Students . . . . .	10	7	17	9	11	20
Totals . . . . .	458	53	511	496	75	571
<i>B. Short Course Enrollment.</i>						
Two-Year Course, second year . . . . .	84	5	89	60	8	68
Two-Year Course, first year . . . . .	68	12	80	85	9	94
Vocational Poultry Course . . . . .	4	—	4	—	—	—
Two-Year Course, special students . . . . .	—	—	—	1	1	2
Totals . . . . .	156	17	173	146	18	164
<i>C. Other Short Course Enrollment.</i>						
School for Country Clergymen . . . . .	32	2	34	—	—	—
Winter School . . . . .	68	16	84	72	11	83
Summer School . . . . .	17	110	127	55	89	144
School for Florists . . . . .	7	4	11	—	—	—
Totals . . . . .	124	132	256	127	100	227



*D. Convention Registration.*

1923.

1924.

Polish Farmers' Day . . . . .	100	200
Farmers' Week and Annual Poultry Convention . . . . .	2,500	3,000
Junior Boys' and Girls' Prize Winners' Camp . . . . .	75	100
Extension Workers' Conference . . . . .	85	100
Sheep Breeders' Conference . . . . .	75	—
Middlesex County Club Champions . . . . .	200	—
Feed Dealers' Conference . . . . .	—	40
Tri-State Conference on Fruit Growing . . . . .	100	—
Hampden County Club Members . . . . .	200	100
Bankers' Conference . . . . .	—	20
Women's Clubs . . . . .	—	80
Lawn Day . . . . .	—	30
Greenkeepers' Day . . . . .	—	35
Boys' Camp . . . . .	—	50
Totals . . . . .	3,330	3,755

TABLE IV. — LEGISLATIVE BUDGET, 1924.

ITEMS.	Requested, 1924.	Appropriated.
Tunnel for steam line from power plant to Stockbridge . . . . .	\$39,000	—
Horticultural Manufactures, laboratory and equipment . . . . .	60,000	—
Miscellaneous buildings and improvements . . . . .	34,650	\$5,650
Addition to Rural Engineering Building and Equipment . . . . .	17,500	15,000
Roads and Walks . . . . .	10,000	1,000
Buildings for Market Garden Field Station at Waltham . . . . .	25,000	25,000 <sup>1</sup>
Totals . . . . .	\$186,150	\$46,650

<sup>1</sup> Subject to sale of Lexington plant at \$25,000.

TABLE V. — CURRENT ACCOUNT, STATE FUNDS.

	Requested 1924.	Appropriated 1924.	Deficiency Appropriation (Balance from 1923).	Expended 1924.	Balance.
Personal Services:					
Administration . . . . .	\$38,635	\$39,600	—	\$37,314 73	\$2,285 27
Instruction . . . . .	205,069	196,000	—	192,016 04	3,983 96
General Maintenance . . . . .	127,000	123,000	\$520 26	127,820 45	—3,700 19
General Maintenance Emergency . . . . .	—	600	—	—	—
Experiment Station . . . . .	87,935	75,000	141 58	74,699 03	442 55
Extension Service . . . . .	55,788	48,525	54 59	48,711 99	—132 40
Market Garden . . . . .	6,000	6,000	—	5,427 42	572 58
Short Courses . . . . .	60,357	58,500	—	58,008 24	491 76
Travel, Office and other Expenses . . . . .	47,375	42,500	804 76	42,237 23	1,067 53
Teaching, lab. supplies and equip. . . . .	56,000	54,000	382 62	55,321 52	61 10
Teaching, lab. supplies and equip. emergency . . . . .	—	1,000	—	—	—
Experiment Station supplies, equip. and publications . . . . .	17,680	15,000	631 68	15,613 23	18 45
Experiment Station travel and office expenses . . . . .	4,370	4,000	78 28	3,750 97	327 31
Extension Service supplies, equip., travel, etc. . . . .	40,400	33,200	363 23	34,265 80	—702 57
Short Courses . . . . .	15,350	12,000	512 75	11,958 60	554 15
Heat, light and power . . . . .	65,000	65,000	223 07	44,081 40	21,141 67
Farm and Grounds . . . . .	20,000	20,000	1,450 96	17,938 66	3,512 30
Repairs, Ordinary . . . . .	25,000	25,000	452 24	25,475 22	—22 98
Replacements . . . . .	27,500	20,000	1,014 25	22,368 52	—1,354 27
Market Gardening . . . . .	4,400	4,200	115 35	4,813 09	—497 74
Fertilizer Law Control . . . . .	13,500	13,500	13 20	13,387 60	125 60
Poultry Disease Law . . . . .	8,000	8,000	54 34	8,074 20	—19 86
Milk-testing inspection law . . . . .	600	600	—	510 01	89 99
Trustees' Expenses . . . . .	1,200	1,200	15 95	1,193 03	22 92
Printing Reports . . . . .	2,000	2,000	782 09	2,257 61	524 48
Commercial Feedstuffs . . . . .	9,500	9,000	18 20	9,095 30	—77 10
Emergency Fund . . . . .	10,000	—	—	—	—
	\$948,659	\$877,425	\$7,629 40	\$856,339 89	\$28,714 51
Emergency Fund appropriated but not used . . . . .	—	3,400	—	—	—

TABLE VI. — STATISTICS OF FRESHMEN ENTERING MASSACHUSETTS AGRICULTURAL COLLEGE, SEPTEMBER, 1924.

## A. Home Addresses of Students (classified by Towns and Cities).

Abington . . . . .	1	Hadley . . . . .	1	Plainfield, Ct. . . . .	1
Amherst . . . . .	10	Hampden . . . . .	1	QUINCY . . . . .	4
Arlington . . . . .	3	Hatfield . . . . .	1	Reading . . . . .	1
Attleboro . . . . .	1	HAVERHILL . . . . .	1	Red Bank, N. J. . . . .	1
Ayer . . . . .	1	Hingham . . . . .	2	Rockland . . . . .	2
Bellingham . . . . .	1	Holden . . . . .	3	SALEM . . . . .	1
Belmont . . . . .	3	Holliston . . . . .	1	Shelburne . . . . .	1
Berlin . . . . .	2	HOLYOKE . . . . .	12	Sherborn . . . . .	1
Bernardston . . . . .	1	Hopedale . . . . .	1	Shirley . . . . .	1
BEVERLY . . . . .	2	KEENE, N. H. . . . .	1	SOMERVILLE . . . . .	1
BOSTON . . . . .	5	LAFAYETTE, IND. . . . .	1	Southborough . . . . .	1
Bridgewater . . . . .	1	LAWRENCE . . . . .	1	South Hadley . . . . .	1
BROCKTON . . . . .	2	Lenox . . . . .	1	SPRINGFIELD . . . . .	5
Brookfield . . . . .	1	Littleton . . . . .	3	Sterling . . . . .	1
CAMBRIDGE . . . . .	2	Longmeadow . . . . .	1	Stoneham . . . . .	1
CHELSEA . . . . .	2	LOWELL . . . . .	3	Stow . . . . .	1
Cheshire . . . . .	1	LYNN . . . . .	1	Sutton . . . . .	1
CHICOPEE . . . . .	2	MANCHESTER, N. H. . . . .	1	Swampscott . . . . .	1
Closter, N. J. . . . .	1	Marion . . . . .	1	Switzerland . . . . .	1
Colrain . . . . .	1	Marshfield . . . . .	1	TAUNTON . . . . .	2
Conway . . . . .	3	Maynard . . . . .	1	Templeton . . . . .	1
Dalton . . . . .	1	Medfield . . . . .	1	Turner, Me. . . . .	1
Danvers . . . . .	2	Millis . . . . .	2	UTICA, N. Y. . . . .	1
DETROIT, MICH. . . . .	1	Monson . . . . .	1	WALTHAM . . . . .	3
East Longmeadow . . . . .	1	Montague . . . . .	3	Ware . . . . .	1
EVERETT . . . . .	1	Natick . . . . .	1	Watertown . . . . .	1
Fair Haven, Vt. . . . .	1	NEW BEDFORD . . . . .	1	Wellesley . . . . .	2
FALL RIVER . . . . .	2	NEWBURYPORT . . . . .	1	West Brookfield . . . . .	1
Falmouth . . . . .	1	NEWTON . . . . .	1	WESTFIELD . . . . .	2
Framingham . . . . .	3	Norfolk . . . . .	1	West Springfield . . . . .	2
Georgetown . . . . .	1	NORTH ADAMS . . . . .	1	Westwood . . . . .	1
Grafton, Vt. . . . .	1	NORTHAMPTON . . . . .	5	Weymouth . . . . .	1
Great Barrington . . . . .	2	Northbridge . . . . .	1	Wilmington . . . . .	1
Greenfield . . . . .	5	Norton . . . . .	2	Winchester . . . . .	1
Groveland . . . . .	1	PHILADELPHIA, PA. . . . .	1	WORCESTER . . . . .	4
Guilford, Vt. . . . .	1	PITTSFIELD . . . . .	1		

## B. Home Addresses (classified by States and Countries).

	Number.	Per Cent.		Number.	Per Cent.
Connecticut . . . . .	1	.54	New York . . . . .	1	.54
Indiana . . . . .	1	.54	Pennsylvania . . . . .	1	.54
Maine . . . . .	1	.54	Switzerland . . . . .	1	.54
Massachusetts . . . . .	170	92.39	Vermont . . . . .	3	1.63
Michigan . . . . .	1	.54			
New Hampshire . . . . .	2	1.09		184	99.98
New Jersey . . . . .	2	1.09			

## C. Home Addresses (classified by Counties of Massachusetts).

	Number.	Per Cent.		Number.	Per Cent.
Barnstable . . . . .	1	.59	Middlesex . . . . .	35	20.59
Berkshire . . . . .	7	4.12	Norfolk . . . . .	13	7.65
Bristol . . . . .	8	4.71	Plymouth . . . . .	10	5.88
Essex . . . . .	12	7.06	Suffolk . . . . .	7	4.12
Franklin . . . . .	14	8.23	Worcester . . . . .	17	10.00
Hampden . . . . .	32	18.82			
Hampshire . . . . .	14	8.23		170	100.00

## D. Nativity of Parents.

	Number.	Per Cent.
Neither parent foreign born . . . . .	130	70.65
Both parents foreign born . . . . .	34	18.48
Father (only) foreign born . . . . .	14	7.61
Mother (only) foreign born . . . . .	6	3.26
	184	100.00

E. Education of Father.

	Number.	Per Cent.
Common School . . . . .	70	38.04
High School . . . . .	56	30.44
Business School . . . . .	16	8.69
College or University . . . . .	34	18.48
No statistics . . . . .	8	4.35
	184	100.00

F. Occupation of Father.

Agriculture and Horticulture . . . . .	40	21.74
Artisans . . . . .	36	19.56
Business . . . . .	55	29.89
Deceased or no statistics . . . . .	14	7.61
Miscellaneous . . . . .	25	13.59
Professional . . . . .	14	7.61
	184	100.00

G. Intended Vocation of Student.

Agriculture or Horticulture (practical) . . . . .	35	19.02
Agriculture or Horticulture (professional) . . . . .	72	39.13
Professions . . . . .	12	6.52
Miscellaneous . . . . .	31	16.85
Undecided or no statistics . . . . .	28	15.22
Home economics . . . . .	6	3.26
	184	100.00

H. Farm Experience.

Brought up on a farm . . . . .	54	29.35
Not brought up on a farm and having no or practically no farm experience . . . . .	67	36.41
Not brought up on a farm, but having had some farm experience . . . . .	63	34.24
	184	100.00

I. Miscellaneous Statistics.

Average Age (Years) . . . . .	18.65
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REPORT OF THE TREASURER.  
For the Fiscal Year ending Nov. 29, 1924.

BALANCE SHEET.

	Dr.	Cr.
1923		
Dec. 1. To balance on hand . . . . .	\$37,396 08	
1924		
Nov. 29. To departmental income . . . . .	163,214 32	
Nov. 29. To receipts from State Treasurer . . . . .	789,590 55	
Nov. 29. To refunds to State Treasurer . . . . .	1,238 57	
Nov. 29. To bills paid by State Treasurer . . . . .	92,576 80	
Nov. 29. To receipts from U. S. Treasurer . . . . .	121,921 57	
Nov. 29. To November schedule in transit . . . . .	126,833 66	
Nov. 29. Refunds transferred to State Treasurer . . . . .		\$1,238 57
Nov. 29. Expenditures for fiscal year . . . . .		1,130,933 44
Nov. 29. Income transferred to State Treasurer . . . . .		163,214 32
Nov. 29. Balance on hand . . . . .		37,385 22
	\$1,332,771 55	\$1,332,771 55

STATEMENT OF LEGISLATIVE APPORTIONMENT AND EXPENDITURES FOR FISCAL  
YEAR ENDING NOV. 29, 1924, AND APPORTIONMENT REQUESTED FOR 1925.

	Apportionment for Last Fiscal Year.		Expenditures.		Requested Apportionment for New Fiscal Year.
College:					
Personal services . . . . .	\$359,120 26		\$357,151 22		\$371,646 00
Maintenance . . . . .	209,592 08		191,118 83		211,000 00
		\$568,712 34		\$548,270 05	\$582,646 00
Experiment Station:					
Personal services . . . . .	\$75,141 58		\$74,699 03		\$82,650 00
Maintenance . . . . .	19,709 96		19,364 20		22,350 00
		94,851 54		94,063 23	105,000 00
Extension Service:					
Personal services . . . . .	\$48,579 59		\$48,711 99		\$55,975 00
Maintenance . . . . .	33,563 23		34,265 80		35,750 00
		82,142 82		82,977 79	91,725 00
Short Courses:					
Personal services . . . . .	\$58,500 00		\$58,008 24		\$62,738 00
Maintenance . . . . .	12,512 75		11,958 60		11,400 00
		71,012 75		60,966 84	74,138 00
Market Garden Field Station:					
Personal services . . . . .	\$6,000 00		\$5,427 42		\$7,000 00
Maintenance . . . . .	4,315 35		4,813 09		5,000 00
		10,315 35		10,240 51	12,000 00
Trustees travel . . . . .	\$1,215 95		\$1,193 03		\$1,200 00
Printing reports . . . . .	2,782 09		2,257 61		2,000 00
Commercial feedstuffs . . . . .	9,018 20		9,095 30		9,000 00
Totals . . . . .		13,016 24		12,545 94	12,200 00
Fertilizer law . . . . .	\$13,513 20		\$13,387 60		\$14,000 00
Poultry law . . . . .	8,054 34		8,074 20		8,500 00
Milk testing law . . . . .	600 00		510 01		600 00
Totals . . . . .		22,167 54		21,971 81	23,100 00
Replacements . . . . .	\$21,014 25	21,014 25	\$22,368 52	22,368 52	\$25,000 00
Emergency . . . . .					10,000 00
Totals . . . . .	\$883,232 83		\$862,404 69		\$935,809 00
Balance unexpended . . . . .			20,828 14		
			\$883,232 83		

## CASH STATEMENT.

	Other Funds.	State Funds.	Totals.
Balance December 1, 1923 . . . . .	\$37,396 08	-	\$37,396 08

*Receipts.*

College receipts from students and others . . . . .			26,606 71
Tuition . . . . .	-	\$5,995 44	
Laboratory fees . . . . .	-	6,398 91	
Rent . . . . .	-	14,212 36	
Departmental Sales . . . . .			74,695 59
Products . . . . .	-	68,250 42	
Miscellaneous . . . . .	-	6,445 17	
Experiment Station . . . . .			15,580 69
Cranberry receipts . . . . .	-	6,341 67	
Chemical receipts . . . . .	-	546 98	
Miscellaneous . . . . .	-	8,692 04	
Extension Service . . . . .			908 21
Correspondence . . . . .	-	625 85	
Miscellaneous . . . . .	-	282 36	
Short Courses . . . . .			4,526 16
Students' fees . . . . .	-	4,118 16	
Winter School . . . . .	-	408 00	
Miscellaneous . . . . .	-	-	
Market Garden Field Station . . . . .			557 38
Produce . . . . .	-	557 38	
Feed Law . . . . .	-	18,002 00	18,002 00
Fertilizer Law . . . . .	-	15,789 50	15,789 50
Milk Testing Law . . . . .	-	840 87	840 87



	Other Funds.	State Funds.	Totals.
Poultry Disease Law . . . . .	—	\$5,707 21	\$5,707 21
Treasurer of the Commonwealth . . . . .			789,590 55
Maintenance . . . . .	—	706,742 04	
Special Appropriations . . . . .	—	77,747 69	
Endowment . . . . .	\$3,313 32		
Department of Education . . . . .	1,787 50		
Federal Government . . . . .			121,921 57
Land Grant of 1862 . . . . .	7,300 00		
Hatch Fund of 1887 . . . . .	15,000 00		
Morrill Fund of 1890 . . . . .	16,666 67		
Adams Fund of 1906 . . . . .	15,000 00		
Nelson Fund of 1907 . . . . .	16,666 66		
Smith Lever Fund of 1914 . . . . .	31,234 74		
Short Courses, Federal Project . . . . .	20,053 50		
November schedules in transit . . . . .	—	126,833 66	126,833 66
Bills paid by State Treasurer . . . . .	—	92,576 80	92,576 80
	<hr/>	<hr/>	<hr/>
	\$164,418 47	\$1,167,114 51	\$1,331,532 98

*Payments.*

College expenses . . . . .			\$594,166 70
Personal services . . . . .	\$45,896 65	\$357,151 22	
Maintenance . . . . .	—	191,118 83	
Experiment Station . . . . .			124,988 23
Personal services . . . . .	30,925 00	74,699 03	
Maintenance . . . . .	—	19,364 20	
Extension Service . . . . .			113,214 78
Personal services . . . . .	29,865 52	48,711 99	
Maintenance . . . . .	371 47	34,265 80	
Short Courses . . . . .			89,941 45
Personal services . . . . .	10,494 18	58,008 24	
Maintenance . . . . .	9,480 43	11,958 60	
Market Garden Field Station . . . . .			10,240 51
Personal services . . . . .	—	5,427 42	
Maintenance . . . . .	—	4,813 09	
Trustees Travel . . . . .	—	1,193 03	1,193 03
Printing reports . . . . .	—	2,257 61	2,257 61
Replacements . . . . .	—	22,368 52	22,368 52
Commercial feedstuffs . . . . .	—	9,095 30	9,095 30
Fertilizer law . . . . .	—	13,387 60	13,387 60
Milk Testing Law . . . . .	—	510 01	510 01
Poultry Disease Law . . . . .	—	8,074 20	8,074 20
Special appropriations . . . . .			140,436 21
1923 Chemistry Laboratory . . . . .	—	109,110 47	
1923 Tenement House . . . . .	—	5,756 43	
1923 Improvements at Tillson Farm . . . . .	—	829 45	
1923 Tool shed and Garage . . . . .	—	975 58	
1923 New Walks . . . . .	—	260 06	
1923 Road Improvements . . . . .	—	8 39	
1923 Replacement of live stock . . . . .	—	2,932 72	
1924 Roads and Walks . . . . .	—	739 17	
1924 Miscellaneous Improvements . . . . .	—	5,650 00	
1924 Rural Engineering Building . . . . .	—	12,178 30	
1924 Market Garden Field Station . . . . .	—	1,995 64	
Income . . . . .	—	163,214 32	163,214 32
Refunds to State Treasurer . . . . .	—	1,059 29	1,059 29
Balance . . . . .	37,385 22	—	37,385 22
	<hr/>	<hr/>	<hr/>
	\$164,418 47	\$1,167,114 51	\$1,331,532 98

## CURRENT ACCOUNT, 1924.

## Disbursements and Receipts.

ACCOUNTS.	Disbursements from Nov. 30, 1923, to Nov. 29, 1924.	Receipts from Nov. 30, 1923, to Nov. 29, 1924.	Apportionment for year ending Nov. 29, 1924.	Balance to Credit.
Dean's Office . . . . .	\$762 94	\$0 39	\$814 70	\$51 76
Executive Order . . . . .	9,243 35	3 70	11,202 15	1,958 80
President's Office . . . . .	1,705 31	3 76	2,073 07	367 76
Registrar's Office . . . . .	617 51	—	750 50	132 99
Salaries . . . . .	37,314 73	—	39,600 00	2,285 27
Treasurer's Office . . . . .	1,835 22	94 96	2,002 20	166 98
Maintenance, Academic:				
Agricultural Economics . . . . .	448 82	1 00	550 00	101 18
Agricultural Education . . . . .	518 41	—	400 30	—118 11
Agronomy . . . . .	1,206 36	188 50	1,214 00	7 64
Animal Husbandry . . . . .	575 34	102 50	562 65	—12 69
Beekeeping . . . . .	390 56	9 45	400 00	9 44
Botany . . . . .	1,538 66	680 10	1,627 57	88 91
Chemistry . . . . .	6,043 19	1,957 00	5,707 20	—335 99
Dairying . . . . .	31,634 11	22,770 04	32,572 73	938 62
Domestic Science . . . . .	1,831 46	77 25	1,410 56	—420 90
Economics and Sociology . . . . .	4 74	—	100 75	96 01
Entomology . . . . .	1,276 78	157 00	1,301 00	24 22
Farm Management . . . . .	409 31	49 50	509 29	99 98
Floriculture . . . . .	7,874 63	2,755 87	7,810 21	—64 42
Forestry . . . . .	352 40	104 50	407 88	55 48
Freshman Agriculture . . . . .	476 28	—	750 00	273 72
General Agriculture . . . . .	2,778 14	—	2,644 85	—133 29
Horticultural Manufactures . . . . .	3,562 34	551 09	3,654 78	92 44
Hospital . . . . .	4,143 76	1,122 20	3,314 92	—828 84
Landscape Gardening . . . . .	553 77	597 50	621 03	67 26
Language and Literature . . . . .	296 60	186 00	308 10	11 50
Mathematics . . . . .	364 70	39 00	400 00	35 30
Microbiology . . . . .	2,241 41	308 61	2,400 00	158 59
Military Science . . . . .	1,734 38	35 40	1,702 45	—31 93
Mount Toby . . . . .	3,555 42	1,756 80	3,551 20	—4 22
Physical Education . . . . .	1,457 17	—	1,500 00	42 83
Physics . . . . .	663 00	189 00	755 50	92 50
Pomology . . . . .	6,788 30	3,016 77	5,718 18	—1,070 12
Poultry Husbandry . . . . .	16,613 90	16,150 65	14,540 18	—2,073 72
Rural Engineering . . . . .	905 46	80 50	905 11	— 35
Rural Sociology . . . . .	179 63	—	200 00	20 37
Vegetable Gardening . . . . .	6,541 60	2,535 47	6,607 25	65 65
Veterinary Science . . . . .	2,319 58	92 00	2,307 58	—12 00
Women's Dormitory . . . . .	3,518 15	—	2,747 90	—770 25
Zoology and Geology . . . . .	546 95	485 00	600 00	53 05
Maintenance, General:				
Farm . . . . .	16,333 22	2,050 99	13,594 92	—2,738 30
General Horticulture . . . . .	8,916 87	122 46	9,055 16	138 29
Graduate School . . . . .	133 29	—	200 00	66 71
Grounds . . . . .	9,600 22	—	9,546 53	—53 69
Library . . . . .	7,649 91	93 35	8,143 10	493 19
Live stock . . . . .	26,299 26	16,915 71	25,037 91	—1,261 35
General Expense . . . . .	1,184 63	1,172 71	—	—
Operating and Maintenance . . . . .	122,171 56	24,845 57	140,492 90	18,321 34
Replacements . . . . .	22,564 52	—	21,014 25	—1,550 27
Endowment fund . . . . .	10,613 32	10,613 32	10,613 32	3,650 00
Instruction:				
Salaries . . . . .	192,016 04	—	196,000 00	3,983 96
United States Treasurer, Morrill Fund . . . . .	16,666 67	16,666 67	16,666 67	9,722 22
United States Treasurer, Nelson Fund . . . . .	16,666 66	16,666 66	16,666 66	9,722 21
State Treasurer, Account of schedules . . . . .	—	570,638 57	—	—
Income to State Treasurer . . . . .	101,302 30	—	—	—
	\$716,942 84	\$715,887 52	\$633,277 21	\$41,915 73
Less Refunds . . . . .	1,055 32	—	—	—
	\$715,887 52	\$715,887 52	—	—
Balance beginning fiscal year December 1, 1923 . . . . .	—	23,094 43	—	—
Balance on hand November 29, 1924 . . . . .	23,094 43	—	—	—
	\$738,981 95	\$738,981 95	—	—

## COLLEGE ACCOUNTS.

*Summary.*

	Disburse- ments.	Receipts.
Cash on hand Dec. 1, 1923 . . . . .	—	\$23,094 43
Institution receipts Nov. 29, 1924 . . . . .	—	101,302 30
State Treasurer's receipts Nov. 29, 1924 . . . . .	—	570,638 57
United States Treasurer's receipts Nov. 29, 1924 . . . . .	—	33,333 33
State Treasurer, Department of Education . . . . .	—	1,787 50
State Treasurer, Endowment fund . . . . .	—	10,613 32
Total Disbursements . . . . .	\$616,535 22	—
Receipts turned in to State Treasurer . . . . .	101,302 30	—
	<hr/>	<hr/>
	\$717,837 52	\$740,769 45
Bills receivable Dec. 1, 1923, deducted . . . . .	—	11,029 42
Bills payable Dec. 1, 1923, deducted . . . . .	1,961 24	—
	<hr/>	<hr/>
	\$715,876 28	\$729,740 03
Bills receivable Nov. 29, 1924 . . . . .	—	6,668 97
Bills payable Nov. 29, 1924 . . . . .	1,929 04	—
Balance . . . . .	18,603 68	—
	<hr/>	<hr/>
	\$736,409 00	\$736,409 00

## NET COSTS OF THE DEPARTMENTS.

DEPARTMENT.	Salaries.	Labor.	Maintenance.	Total.	Receipts.	Balance.
Dean's Office . . . . .	\$4,125 01	\$394 34	\$368 60	\$4,887 95	\$0 39	\$4,887 56
Executive Order . . . . .	—	459 60	8,783 75	9,243 35	3 70	9,239 65
President's Office . . . . .	16,798 40	291 35	1,413 96	18,503 71	3 76	18,499 95
Registrar's Office . . . . .	—	103 66	513 85	617 51	—	617 51
Treasurer's Office . . . . .	16,391 32	273 43	1,561 79	18,226 54	94 96	18,131 58
Totals . . . . .	\$37,314 73	\$1,522 38	\$12,641 95	\$51,479 06	\$102 81	\$51,376 25
<i>Instruction and Maintenance.</i>						
Agricultural Economics . . . . .	\$9,310 00	\$43 21	\$405 61	\$9,758 82	\$1 00	\$9,757 82
Agricultural Education . . . . .	5,441 25	244 13	274 28	5,959 66	—	5,959 66
Agromony . . . . .	7,615 00	695 55	510 81	8,821 36	188 50	8,632 86
Animal Husbandry . . . . .	3,750 00	67 75	507 59	4,325 34	102 50	4,222 84
Beekeeping . . . . .	2,205 00	73 06	317 50	2,595 56	9 45	2,586 11
Botany . . . . .	12,617 79	405 79	1,132 87	14,156 45	680 10	13,476 35
Chemistry . . . . .	15,867 67	1,450 83	4,592 36	21,910 86	1,957 00	19,953 86
Dairying . . . . .	7,320 00	6,589 65	25,044 46	38,954 11	22,770 04	16,184 07
Dean's Office . . . . .	2,952 50	—	—	2,952 50	—	2,952 50
Domestic Science . . . . .	7,762 50	224 15	1,607 31	9,593 96	77 25	9,516 71
Economics and Sociology . . . . .	1,532 67	—	4 74	1,537 41	—	1,537 41
Entomology . . . . .	10,697 00	813 30	463 48	11,973 78	157 00	11,816 78
Farm . . . . .	—	24,685 74	17,946 74	42,632 48	18,966 70	23,665 78
Farm Management . . . . .	5,500 00	53 74	355 57	5,909 31	49 50	5,859 81
Floriculture . . . . .	3,570 00	6,426 09	1,448 54	11,444 63	2,755 87	8,688 76
Forestry . . . . .	2,620 00	204 57	147 83	2,972 40	104 50	2,867 90
Freshman Agriculture . . . . .	214 93	215 80	260 48	691 21	—	691 21
General Agriculture . . . . .	2,915 17	2,127 93	650 21	5,693 31	—	5,693 31
General Expense . . . . .	—	2,767 43	—1,582 80	1,184 63	1,172 71	11 92
General Horticulture . . . . .	10,303 84	5,483 38	3,433 49	19,220 71	122 46	19,098 25
Graduate School . . . . .	—	—	133 29	133 29	—	133 29
Grounds . . . . .	—	8,715 67	884 55	9,600 22	—	9,600 22
Horticultural Manufactures . . . . .	5,550 00	1,614 98	1,947 36	9,112 34	551 09	8,561 25





## EXPENSE OPERATING AND MAINTENANCE.

	Salaries and Labor.	Fuel and Water.	Repairs.	Equipment.	Miscellaneous.	Totals.
General:						
General Superintendent						\$2,078 33
Office	\$2,078 33	—	—	—	—	1,173 40
Power Plant:	1,056 15				\$117 25	
Heat	13,730 74	\$50,906 16	\$3,458 24	—	324 53	68,419 67
Light	6,510 34	—	207 47	—	89 43	6,807 24
Tools	—	—	—	\$1,387 26	—	1,387 26
Amherst Water Company						3,615 32
Night watchman	2,408 90	3,615 32	—	—	40 88	2,449 78
Mail service	424 17	—	—	—	—	424 17
Water mains	—	—	145 77	—	—	145 77
Steam mains	—	—	1,122 85	—	—	1,122 85
Electric light circuit	—	—	1,044 08	—	—	1,044 08
Freight and Express	—	—	—	—	2,365 99	2,365 99
Telephone	—	—	—	—	2,193 21	2,193 21
Truck	—	—	—	—	793 68	793 68
Miscellaneous sundry	—	—	35 23	—	185 15	220 38
Sewers and cesspools	—	—	243 31	—	—	243 31
Walks and drives	—	—	137 89	—	—	137 89
Emergency maintenance	—	—	1,566 88	—	—	1,566 88
Expert Service:						
Architect	2,334 02	—	—	—	—	2,334 02
Auditors	250 00	—	—	—	—	250 00
Fire department	—	—	—	—	244 03	244 03
Totals .	\$28,792 65	\$54,521 48	\$7,901 72	\$1,387 26	\$6,354 15	\$99,017 26

## EXPENSE OPERATING AND MAINTENANCE — Continued.

COLLEGE BUILDINGS.	Sundry.	Electric Repairs.	Plumbing Repairs.	Heat Repairs.	C. & M. Repairs.	Janitor.	Totals.
Adams Hall . . . . .	—	\$93 21	\$143 23	\$51 40	\$64 10	—	\$351 94
Apiary . . . . .	—	3 02	7 66	24 23	50 69	—	85 60
Cashier's House . . . . .	—	2 35	57	—	243 70	—	246 62
Clark Hall . . . . .	—	29 57	34 02	12 89	88 31	—	164 79
Cold Storage Laboratory . . . . .	—	—	1 63	—	—	—	1 63
Dairy Barn and Storage . . . . .	—	—	32 48	31 37	355 22	—	449 78
Draper Hall . . . . .	—	30 71	854 91	238 98	1,920 33	—	3,860 40
Drill Hall and Gun Shed . . . . .	\$241 42	170 76	49 13	6 15	135 43	\$434 00	193 55
Durfee Glass House (old) . . . . .	—	2 84	28	13 62	12 18	—	26 08
Durfee Glass House (new) . . . . .	—	—	—	14 93	41 16	—	56 09
Farm Bungalow No. 1 . . . . .	—	—	—	16 51	10 64	—	41 49
Farm Bungalow No. 2 . . . . .	—	—	14 34	—	52 18	—	52 18
Farm Bungalow No. 3 . . . . .	—	—	—	—	52 18	—	52 18
Farm Bungalow No. 4 . . . . .	—	—	—	—	92 90	—	176 28
Farm Bull Pens and Fence . . . . .	—	28 03	38 94	16 41	11 75	—	16 78
Fernald Hall . . . . .	—	—	5 03	—	279 93	—	501 66
Flint Laboratory . . . . .	—	13 76	84 33	123 64	438 01	—	570 28
French Hall . . . . .	—	12 15	60 55	59 57	107 01	—	412 11
Grossmann Laboratory . . . . .	—	195 58	58 56	50 96	—	—	16 05
Grinnell Arena . . . . .	—	8 02	8 03	6 43	—	—	49 36
Harlow House . . . . .	—	3 20	3 20	—	39 73	—	16 06
Horse Barn . . . . .	—	—	10 53	—	5 53	—	22 25
Head of Division of Horticulture . . . . .	—	—	4 87	—	17 38	—	462 88
Horticultural Barn . . . . .	—	27 64	38 34	—	396 90	—	95 71
Horticultural Garage . . . . .	—	1 40	3 96	2 03	88 32	—	56
Horticultural Tool Shed . . . . .	—	—	60	—	7 30	—	7 90
Hospital . . . . .	—	—	29 03	25 47	623 55	—	693 59
Jewett House and Barn . . . . .	10 29	5 25	2 17	—	236 49	—	258 54
Mathematical Building . . . . .	19 21	67	9 24	—	33 17	—	54 08
Memorial Hall . . . . .	413 82	1 34	32 03	10 33	74 48	2,035 57	2,627 19
Microbiology Building . . . . .	—	48 23	32 03	23 06	285 31	—	403 70
North Dormitory . . . . .	—	8 36	38 61	71 42	166 27	—	1,006 00
Palge Laboratory and Stable . . . . .	—	118 11	469 66	135 98	60 25	1,015 98	223 50
Physics Laboratory . . . . .	—	1 55	127 10	34 60	9 66	—	48 65
Piggery . . . . .	—	—	9 84	29 15	83 09	—	107 47
Poultry departments:	—	1 25	4 43	18 70	—	—	162 40
Poultry No. 1 . . . . .	—	—	14 41	8 23	136 50	—	65 87
Poultry No. 2 . . . . .	—	3 26	3 75	—	62 12	—	7 88
Poultry No. 3 . . . . .	—	—	—	—	46 26	—	46 26
Poultry No. 8 . . . . .	—	—	—	—	46 26	—	46 26
Poultry No. 9 . . . . .	—	—	—	—	46 27	—	46 27
Poultry No. 12 . . . . .	—	—	—	—	—	—	—





## FARM DISBURSEMENTS.

	Repairs.	Labor.	Equip- ment.	Feed.	Supplies.	Sundry.	Bedding.	Fer- tilizer.	Seeds.	Improve- ments.	Totals.
Dairy Cattle . . . . .	-	\$6,412 91	\$93 91	\$1,775 19	\$4,884 96	\$1,612 28	-	-	-	-	\$14,779 25
Horses . . . . .	-	2,077 11	7 73	100 60	1,227 86	174 83	-	-	-	-	3,588 13
Sheep . . . . .	-	1,343 22	5 84	49 12	281 99	108 25	-	-	-	-	1,788 42
Swine . . . . .	-	1,395 01	3 33	290 16	414 86	47 83	-	-	-	-	2,151 19
Supplies . . . . .	-	503 01	-	2,049 31	-	-	\$1,439 95	-	-	-	3,992 27
Teams . . . . .	-	-190 49	117 30	-	-	309 67	-	-	-	-	236 48
Field Crops . . . . .	-	4,978 28	47 20	-	7 20	49 39	-	\$660 09	\$417 76	-	6,110 72
Tools and Machinery . . . . .	\$867 41	478 77	-	-	576 59	-	-	-	-	-	1,969 97
Miscellaneous . . . . .	-	7,689 92	-	-	48 24	106 36	-	-	-	\$171 53	8,016 05
Totals . . . . .	\$867 41	\$24,685 74	\$275 31	\$4,264 38	\$7,441 70	\$2,408 61	\$1,439 95	\$660 09	\$417 76	\$171 53	\$42,632 48

## FARM CREDITS.

	Wool.	Milk.	Stock.	Sundry.	Labor.	Field Crops.	Tools and Machinery.	Improve- ments.	Totals.
Dairy Cattle . . . . .	-	\$9,093 15	\$5,317 18	\$18 08	-	-	-	-	\$14,428 41
Horses . . . . .	-	-	156 27	10 00	-	-	-	-	166 27
Sheep . . . . .	\$245 86	-	809 59	-	-	-	-	-	1,055 45
Swine . . . . .	-	-	1,230 58	-	-	-	-	-	1,230 58
Supplies . . . . .	-	-	-	35 00	-	-	-	-	35 00
Teams . . . . .	-	-	-	-	\$76 58	-	-	-	76 58
Field Crops . . . . .	-	-	-	-	-	\$688 55	-	-	688 55
Tools and Machinery . . . . .	-	-	-	-	133 79	-	-	-	-
Miscellaneous . . . . .	-	-	-	-	-	-	-	-	-
Totals . . . . .	\$245 86	\$9,093 15	\$7,513 62	\$63 08	\$210 37	\$688 55	-	\$1,152 07	\$18,966 70

AGRICULTURAL DIVISION.  
*Disbursements and Receipts.*

	Disbursements.	Receipts.
Agronomy . . . . .	\$1,206 36	\$188 50
Animal husbandry . . . . .	575 34	102 50
Dairying . . . . .	31,634 11	22,770 04
Farm . . . . .	42,632 48	18,966 70
Farm management . . . . .	409 31	49 50
Poultry husbandry . . . . .	16,613 90	16,150 65
Rural engineering . . . . .	905 46	80 50
Division totals . . . . .	\$93,976 96	\$58,308 39

*Summary.*

	DR.	CR.
By total division receipts . . . . .		\$58,308 39
By bills receivable . . . . .		4,673 60
By net apportionment . . . . .		30,628 40
To total division disbursements . . . . .	\$93,976 96	
To bills payable . . . . .	228 53	
Balance . . . . .		595 10
	\$94,205 49	\$94,205 49

*Inventory of Quick Assets.*

	Nov. 30, 1923.	Nov. 29, 1924.
Inventory of produce . . . . .	\$16,370 55	\$15,607 77
Inventory of cattle . . . . .	22,855 00	27,635 00
Inventory of swine . . . . .	1,481 00	1,395 00
Inventory of horses . . . . .	3,775 00	5,775 00
Inventory of poultry . . . . .	4,783 50	3,993 50
Inventory of sheep . . . . .	2,020 00	2,210 00
	\$51,284 55	\$56,616 27

HORTICULTURAL DIVISION.  
*Disbursements and Receipts.*

	Disbursements.	Receipts.
Floriculture . . . . .	\$7,874 63	\$2,755 87
Forestry . . . . .	352 40	104 50
General Horticulture . . . . .	8,916 87	122 46
Grounds . . . . .	9,600 22	—
Horticultural Manufactures . . . . .	3,562 34	551 09
Landscape Gardening . . . . .	553 77	597 50
Mount Toby . . . . .	3,555 42	1,756 80
Pomology . . . . .	6,788 30	3,016 77
Vegetable Gardening . . . . .	6,541 60	2,535 47
Division totals . . . . .	\$47,745 55	\$11,440 46

*Summary.*

	DR.	CR.
By total division receipts . . . . .		\$11,440 46
By bills receivable . . . . .		1,810 32
By net apportionment . . . . .		35,531 76
To total division disbursements . . . . .	\$47,745 55	
To bills payable . . . . .	21 68	
By balance . . . . .	1,015 31	
	\$48,782 54	\$48,782 54

Inventory of Quick Assets.

	Nov. 30, 1923.	Nov. 29, 1924.
Floriculture . . . . .	\$2,700 00	\$2,275 00
General horticulture (live stock) . . . . .	1,140 00	1,265 00
Horticultural manufactures . . . . .	295 00	532 00
Mount Toby . . . . .	78 40	542 50
Pomology . . . . .	575 00	1,500 00
Vegetable Gardening . . . . .	547 00	584 50
	\$5,335 40	\$6,699 00

EXPERIMENT STATION.  
Disbursements and Receipts.

	Disbursements from Dec. 1, 1923, to Nov. 29, 1924.	Receipts from Dec. 1, 1923, to Nov. 29, 1924.	Apportion- ment for Year ending Nov. 29, 1924.	Balance to Credit.
Administration . . . . .	\$1,318 80	\$5 43	\$1,533 54	\$214 74
Agricultural economics . . . . .	867 35	—	913 16	45 81
Agronomy . . . . .	2,042 29	—	2,040 00	—2 29
Botanical . . . . .	2,894 99	—	2,967 91	72 92
Chemical . . . . .	3,206 90	546 98	3,554 47	347 57
Cranberry . . . . .	4,553 99	6,341 67	4,229 70	—324 29
Entomological . . . . .	808 09	—	861 20	53 11
Farm Management . . . . .	148 30	—	200 00	51 70
Freight and Express . . . . .	181 80	—	175 00	—6 80
Library . . . . .	1,044 25	—	1,020 24	—24 01
Meteorology . . . . .	452 58	—	500 00	47 42
Microbiology . . . . .	1,014 75	—	1,020 81	6 06
Pomology . . . . .	2,869 41	2,407 13	2,978 20	108 79
Poultry . . . . .	5,682 30	4,576 71	5,610 50	—71 80
Publications . . . . .	1,729 64	—	1,789 52	59 88
Salaries . . . . .	83,977 19	—	83,052 21	—924 98
Station Service . . . . .	11,668 98	1,426 77	11,882 56	213 58
Veterinary . . . . .	526 62	276 00	522 52	—4 10
Hatch Fund . . . . .	—	15,000 00	—	—
Adams Fund . . . . .	—	15,000 00	—	—
State Treasurer, account of schedules . . . . .	—	94,063 23	—	—
Income remitted to State Treasurer . . . . .	15,580 69	—	—	—
	\$140,568 92	\$139,643 92	\$124,851 54	—\$136 69
Balance beginning fiscal year December 1, 1923 . . . . .	—	4,275 00	—	—
Balance on hand November 29, 1924 . . . . .	3,350 00	—	—	—
	\$143,918 92	\$143,918 92	—	—

Summary.

	Disburse- ments.	Receipts.
Cash on hand Dec. 1, 1923 . . . . .	—	\$4,275 00
Receipts from State Treasurer . . . . .	—	94,063 23
Receipts from United States Treasurer . . . . .	—	30,000 00
Receipts from other sources . . . . .	—	15,580 69
Total Disbursements . . . . .	\$124,988 23	—
Receipts turned in to State Treasurer . . . . .	15,580 69	—
	\$140,568 92	\$143,918 92
Bills receivable Dec. 1, 1923 deducted . . . . .	—	1,273 14
Bills payable Dec. 1, 1923 deducted . . . . .	329 96	—
	\$140,238 96	\$142,645 78
Bills receivable Nov. 29, 1924 . . . . .	—	2,498 37
Bills payable Nov. 29, 1924 . . . . .	53 59	—
Balance . . . . .	4,851 60	—
	\$145,144 15	\$145,144 15

EXTENSION SERVICE.  
*Disbursements and Receipts.*

CLASSIFICATION.	Disbursements.	Receipts.	Apportionment.	Balance.
Administration . . . . .	\$1,678 53	\$102 55	\$3,006 46	\$1,327 93
Animal husbandry . . . . .	823 62	—	800 00	—23 62
Clothing efficiency . . . . .	1,961 26	—	2,003 17	41 91
Co-op. marketing . . . . .	624 27	—	600 30	—23 97
Correspondence Courses . . . . .	1,126 83	625 85	3,000 00	1,873 17
County Agents work . . . . .	1,550 84	—	1,002 00	—548 84
Dairying . . . . .	129 66	—	100 00	—29 66
Exhibits . . . . .	822 97	—	700 40	—122 57
Extension Courses at College . . . . .	3,088 42	—	1,501 06	—1,587 36
Extension schools . . . . .	928 12	—	250 00	—678 12
Farm Management demonstration . . . . .	795 39	23 50	1,200 00	404 61
Home economics . . . . .	1,902 10	31 05	2,002 61	100 51
Home gardening . . . . .	752 73	—	1,000 00	247 27
Household Management . . . . .	476 59	90	—	—476 59
Horticultural Manufactures . . . . .	2,209 19	99 04	1,500 60	—708 59
Injurious Insects . . . . .	17 08	—	—	—17 08
Junior extension work . . . . .	6,136 54	—	5,505 10	—631 44
Landscape extension . . . . .	206 00	—	600 70	394 70
Lectures . . . . .	343 71	—	100 00	—243 71
Library extension . . . . .	128 66	—	150 00	21 34
Nutrition . . . . .	745 13	—	1,400 00	654 87
Plant diseases . . . . .	30 35	—	—	—30 35
Pomology . . . . .	1,706 98	—	1,315 80	—391 18
Poultry husbandry . . . . .	1,453 82	5 20	1,102 35	—351 47
Printing . . . . .	4,123 89	20 12	3,922 33	—201 56
Personal services . . . . .	48,711 99	—	48,579 59	—132 40
Rural Engineering . . . . .	27 88	—	—	—27 88
Soils and Crops . . . . .	479 21	—	800 35	321 14
State Treasurer, account of schedules . . . . .	—	82,977 79	—	—
Income to State Treasurer . . . . .	908 21	—	—	—
	\$83,889 97	\$83,886 00	\$82,142 82	—\$838 94
Less refund . . . . .	3 97	—	—	—
	\$83,886 00	\$83,886 00	—	—

*Summary.*

	Disbursements.	Receipts.
Balance Dec. 1, 1923 <sup>1</sup> . . . . .	—	\$9,086 41
Receipts Nov. 29, 1924 . . . . .	—	908 21
Received from State Treasurer . . . . .	—	82,977 79
Received from United States Treasurer . . . . .	—	31,234 74
Disbursements to Nov. 29, 1924 <sup>1</sup> . . . . .	\$113,214 78	—
Receipts turned in to State Treasurer . . . . .	908 21	—
	\$114,122 79	\$124,207 15
Bills receivable Dec. 1, 1923 deducted . . . . .	—	23 32
Bills payable Dec. 1, 1923 deducted . . . . .	58 84	—
	\$114,063 95	\$124,183 83
Bills receivable Nov. 29, 1924 . . . . .	—	63 22
Bills payable Nov. 29, 1924 . . . . .	5 12	—
Balance . . . . .	10,177 98	—
	\$124,247 05	\$124,247 05

<sup>1</sup> Includes Federal Smith-Lever Fund.



## SMITH-LEVER FUND (FEDERAL).

	Disbursements.	Receipts.
Administration . . . . .	\$275 22	—
Home economics . . . . .	18 13	—
Junior extension . . . . .	35 72	—
Salaries . . . . .	29,865 52	—
Vegetable gardening . . . . .	42 40	—
State Treasurer . . . . .	—	\$31,234 74
	<hr/>	<hr/>
	\$30,236 99	\$31,234 74
Balance beginning fiscal year Dec. 1, 1923 . . . . .	—	9,086 41
Balance on hand Nov. 29, 1924 . . . . .	10,084 16	—
	<hr/>	<hr/>
Totals . . . . .	\$40,321 15	\$40,321 15

## SHORT COURSES.

	Disbursements.	Receipts.	Apportionment.	Balance.
Agricultural economics . . . . .	\$32 44	—	\$50 00	\$17 56
Agronomy . . . . .	503 80	\$221 50	500 00	—3 80
Animal husbandry . . . . .	67 96	100 50	100 00	32 04
Dairying . . . . .	2,996 78	268 00	3,000 00	3 22
Domestic science . . . . .	179 86	—	100 00	—79 86
Entomology . . . . .	94 87	—	100 00	5 13
Farm Management . . . . .	37 11	—	50 00	12 89
Floriculture . . . . .	139 52	72 50	100 00	—39 52
Forestry . . . . .	—	—	50 00	50 00
Horticulture . . . . .	271 31	69 50	200 00	—71 31
Horticultural Manufactures . . . . .	495 42	—	726 24	230 82
Library . . . . .	136 27	—	125 00	—11 27
Microbiology . . . . .	37 24	31 16	50 00	12 76
Personal services . . . . .	58,008 24	—	58,500 00	491 76
Physical education . . . . .	208 55	—	200 00	—8 55
Pomology . . . . .	825 23	—	949 90	124 67
Poultry husbandry . . . . .	702 67	271 50	600 00	—102 67
Rural engineering . . . . .	740 42	275 50	850 00	109 58
Short Course Office . . . . .	4,100 58	—	4,168 55	67 97
Treasurer's Office . . . . .	248 26	—	289 10	40 84
Tuition . . . . .	—	2,730 00	—	—
Vegetable gardening . . . . .	140 31	78 00	303 96	163 65
Winter school registration . . . . .	—	408 00	—	—
State Treasurer, account of schedules . . . . .	—	69,966 84	—	—
Income to State Treasurer . . . . .	4,526 16	—	—	—
	<hr/>	<hr/>	<hr/>	<hr/>
Totals . . . . .	\$74,493 00	\$74,493 00	\$71,012 75	\$1,045 91

## Summary.

	Disbursements.	Receipts.
State appropriation . . . . .	—	\$71,012 75
Amount of receipts . . . . .	—	4,526 16
Receipts transferred to State Treasurer . . . . .	\$4,526 16	—
Department expenditures . . . . .	69,966 84	—
Balance unexpended . . . . .	1,045 91	—
	<hr/>	<hr/>
Totals . . . . .	\$75,538 91	\$75,538 91

## MARKET-GARDEN FIELD STATION.

	Debit.	Credit.
Labor . . . . .	\$5,427 42	
Maintenance . . . . .	4,813 09	
	<hr/>	<hr/>
Totals . . . . .	\$10,240 51	
State appropriation . . . . .		\$10,315 35
Amount of Receipts . . . . .		557 38
Amount of Receipts transferred to State Treasurer . . . . .	\$557 38	
Department expenditures . . . . .	10,240 51	
Balance unexpended . . . . .	74 84	
	<hr/>	<hr/>
Totals . . . . .	\$10,872 73	\$10,872 73

## SPECIAL APPROPRIATIONS.

	Date made.	Appropriations.	Amount Expended to Date.	Unexpended Balance.
Chemistry Laboratory . . . . .	1922	\$300,000 00	\$294,385 78	\$5,614 22
Tenement House . . . . .	1923	8,000 00	8,000 00	-
Improvements at Tillson Farm . . . . .	1923	5,000 00	5,000 00	-
Tool shed and Garage . . . . .	1923	6,000 00	6,000 00	-
New walks . . . . .	1923	2,500 00	2,500 00	-
Road Improvements . . . . .	1923	8,000 00	8,000 00	-
Replacement of Live stock . . . . .	1923	5,000 00	5,000 00	-
Roads and Walks . . . . .	1924	1,000 00	739 17	260 83
Emergency needs . . . . .	1924	5,000 00	-	5,000 00
Miscellaneous Improvements . . . . .	1924	5,650 00	5,650 00	-
Rural Engineering building . . . . .	1924	15,000 00	12,178 30	2,821 70
Market garden Field station . . . . .	1924	25,000 00	1,995 64	23,004 36
	-	\$386,150 00	\$349,448 89	\$36,701 11
Amount spent previous to Dec. 1, 1923 . . . . .	-	-	-	209,012 68
Amount expended during fiscal year . . . . .	-	-	-	140,436 21
Unexpended balance Nov. 29, 1924 . . . . .	-	-	36,701 11	-
	-	\$386,150 00	\$386,150 00	\$386,150 00

## INVENTORY — REAL ESTATE.

*Land (Estimated Value).*

Angus Land . . . . .	\$800 00
Allen Place . . . . .	500 00
Baker Place . . . . .	2,500 00
Bangs Place . . . . .	2,350 00
Brooks Farm . . . . .	11,000 00
Brown Land . . . . .	500 00
Charmbury Place . . . . .	450 00
Clark Place . . . . .	4,500 00
College Farm . . . . .	37,000 00
Cranberry Land . . . . .	12,745 00
George Cutler Jr. Trustee . . . . .	2,700 00
Dickinson Land . . . . .	7,850 00
Harlow Farm and Orchard . . . . .	3,284 63
Hawley and Brown Place . . . . .	675 00
Kellogg Place . . . . .	3,368 45
Loomis Place . . . . .	415 00
Louisa Baker Place . . . . .	5,000 00
Market Garden Field Station . . . . .	21,000 00
Mount Toby demonstration forest . . . . .	30,000 00
Newell Farm . . . . .	2,800 00
Old Creamery Place . . . . .	1,000 00
Owen Farm . . . . .	5,000 00
Pelham Quarry . . . . .	500 00
Tillson Farm . . . . .	2,950 00
Westcott Place . . . . .	2,250 00
	<hr/>
	\$161,138 08

## College Buildings (Estimated Value, 1924).

	Inventory at Beginning of Year.	Per Cent deducted.	Value at Beginning of Year less Deterioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Adams Hall . . . . .	\$125,809 90	2	\$123,293 70	\$498 94	\$123,792 64
Apiary . . . . .	2,827 13	2	2,770 59	85 60	2,856 19
Cashier's House . . . . .	2,145 83	5	2,038 54	246 62	2,285 16
Chemistry Store House . . . . .	49 55	2	48 56	-	48 56
Clark Hall . . . . .	60,205 69	2	59,001 58	164 79	59,166 37
Cold Storage Laboratory . . . . .	10,172 62	2	9,969 17	1 63	9,970 80
Dairy Barn and Storage . . . . .	29,361 49	3	28,480 65	449 78	28,930 43
Draper Hall . . . . .	71,971 67	3	69,812 52	3,618 98	73,431 50
Drill Hall and Gun Shed . . . . .	9,223 52	5	8,762 34	193 55	8,955 89
Durfee Glass House, old . . . . .	7,296 29	5	6,931 48	26 08	6,957 56
Durfee Glass House, new . . . . .	10,247 16	5	9,734 80	56 09	9,790 89
Farm Blacksmith Shop . . . . .	418 13	3	405 59	-	405 59
Farm Bungalow No. 1 . . . . .	2,477 64	3	2,403 31	41 49	2,444 80
Farm Bungalow No. 2 . . . . .	-	-	-	-	4,265 16
Farm Bungalow No. 3 . . . . .	-	-	-	-	4,207 93
Farm House No. 1 . . . . .	3,196 62	3	3,100 62	176 28	3,276 90
Farm Bull Pens and Fence . . . . .	4,529 40	5	4,302 93	67 78	4,370 71
Fernald Hall . . . . .	69,982 09	2	68,582 45	550 06	69,132 51
Flint Laboratory . . . . .	69,580 58	2	68,188 97	2,856 82	71,045 79
French Hall . . . . .	45,696 77	2	44,782 83	776 83	45,559 66
Goessmann Laboratory . . . . .	-	-	-	-	288,299 00
Grinnell Arena . . . . .	8,628 35	2	8,455 78	90 90	8,546 68
Ground Tool Shed . . . . .	189 57	5	180 09	-	180 09
Harlow House . . . . .	2,090 29	5	1,985 78	16 06	2,001 84
Horse Barn . . . . .	4,627 08	3	4,488 27	22 25	4,510 52
Head of Division of Horticul- ture . . . . .	2,761 34	5	2,623 27	462 88	3,086 15
Horticultural Barn . . . . .	3,761 82	3	3,648 97	95 71	3,744 68
Horticultural Garage . . . . .	1,533 48	3	1,487 48	56	1,488 04
Horticultural Tool Shed . . . . .	4,294 06	3	4,165 24	983 48	5,148 72
Horticultural Open Shed . . . . .	445 88	5	423 59	-	423 59
Horticultural Manufactures Shed . . . . .	3,271 38	5	3,107 81	-	3,107 81
Hospital . . . . .	15,426 88	2	15,118 34	683 30	15,801 64
Jewett House and Barn . . . . .	3,156 03	5	2,998 23	239 33	3,237 56
Machinery Barn . . . . .	3,342 20	3	3,241 93	-	3,241 93
Market Garden Field Station Farmhouse . . . . .	-	-	-	-	6,000 00
Market Garden Field Station Ice House . . . . .	-	-	-	-	100 00
Market Garden Field Station Large Cow Barn . . . . .	-	-	-	-	9,000 00
Market Garden Field Station Small Stock Barn . . . . .	-	-	-	-	2,000 00
Market Garden Field Station Small Shed . . . . .	-	-	-	-	800 00
Mathematical Building . . . . .	4,394 90	5	4,175 15	54 08	4,229 23
Memorial Hall . . . . .	102,133 02	2	100,090 36	177 80	100,268 16
Microbiology Building . . . . .	55,477 59	2	54,368 04	403 70	54,771 74
Military Storage . . . . .	193 44	5	183 77	-	183 77
Mount Toby House and Barn . . . . .	3,402 63	5	3,232 50	-	3,232 50
North Dormitory . . . . .	27,553 35	2	27,002 28	890 02	27,892 30
Paige Laboratory and Stable . . . . .	23,563 33	2	23,092 06	296 39	23,388 45
Physics Laboratory . . . . .	4,634 80	5	4,403 06	48 65	4,451 71
Piggery . . . . .	2,335 97	3	2,265 89	451 94	2,717 83
Poultry departments:					
No. 1, Demonstration Building . . . . .	1,873 29	2	1,835 82	167 92	2,003 74
2, Oil House . . . . .	72 09	2	70 65	65 87	136 52
3, Brooder, killing and fattening labora- tory . . . . .	2,268 80	2	2,223 42	7 88	2,231 30
4, Mechanics, storage building and incu- bator cellar . . . . .	4,149 59	2	4,066 60	-	4,066 60
5, Laying House . . . . .	1,750 28	2	1,715 27	-	1,715 27
6, Manure Shed . . . . .	138 16	2	135 40	-	135 40
7, Small Henhouse . . . . .	43 09	2	42 13	-	42 13
8, Breeding House . . . . .	1,416 38	2	1,388 05	46 26	1,434 31
9, Experimental Breeding House . . . . .	584 99	2	573 29	46 26	619 55
10, Duck House . . . . .	89 28	2	87 49	-	87 49
11, Unit house for 200 hens . . . . .	448 21	2	439 25	-	439 25
12, Unit house for 100 hens . . . . .	361 66	2	354 43	46 27	400 70
Power Plant and Storage Building, including Coal Pocket . . . . .	49,472 39	2	48,482 94	419 08	48,902 02

*College Buildings, Etc. — Concluded.*

	Inventory at Beginning of Year.	Per Cent deducted.	Value at Beginning of Year less Deterioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
President's House . . . . .	\$13,589 32	3	\$13,181 64	\$377 51	\$13,559 15
Rural Engineering Building . . . . .	15,043 63	2	14,742 76	18 16	14,760 92
Sheep Barn . . . . .	1,308 78	3	1,269 52	254 16	1,523 68
South Dormitory . . . . .	40,951 76	2	40,132 72	1,434 44	41,567 16
Stable for Cavalry Unit . . . . .	17,756 81	3	17,424 11	922 12	18,346 23
Stockbridge Hall . . . . .	162,115 79	2	158,873 47	753 49	159,626 96
Agronomy Greenhouse and storage . . . . .	1,924 67	2	1,886 18	2,816 06	4,702 24
Stockbridge House . . . . .	2,240 05	5	2,128 05	24 24	2,152 29
Stone Chapel . . . . .	29,620 71	2	29,028 30	258 82	29,287 12
Turbine House . . . . .	17,706 08	2	17,351 96	—	17,351 96
Vegetable Plant House . . . . .	5,253 33	5	4,990 66	270 50	5,261 26
Waiting Station . . . . .	503 11	2	493 05	46 40	539 45
Wilder Hall . . . . .	32,511 68	2	31,861 45	157 35	32,018 80
Young Stock Barns . . . . .	6,358 44	3	6,167 69	228 96	6,396 65
Totals . . . . .	\$1,211,961 84	—	\$1,184,294 82	\$23,090 22	\$1,522,057 13

*College Equipment (Estimated Value).*

## Administrative Division:

Dean's Office . . . . .	\$1,318 45
President's Office . . . . .	2,676 00
Registrar's Office . . . . .	1,205 60
Treasurer's Office . . . . .	5,095 00

## Agricultural Division:

Agronomy . . . . .	8,351 97
Animal Husbandry . . . . .	925 37
Dairy . . . . .	25,972 10
Farm . . . . .	22,968 99
Farm Live Stock . . . . .	37,015 00
Farm Management . . . . .	1,150 95
Freshman Agriculture . . . . .	164 80
General Agriculture . . . . .	2,248 77
Poultry . . . . .	9,743 48
Rural Engineering . . . . .	7,167 93

## Rural Home Life

Dining Hall . . . . .	4,116 79
Extension . . . . .	29,389 87
	15,153 93

## General Science:

Apiary . . . . .	2,580 77
Botanical . . . . .	25,799 76
Chemistry . . . . .	29,792 63
Entomology . . . . .	6,314 10
Mathematics . . . . .	2,329 80
Microbiology . . . . .	6,577 99
Physics . . . . .	8,107 12
Veterinary . . . . .	14,780 62
Zoölogy and Geology . . . . .	17,348 70

## Graduate School

	127 18
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## Horticultural Division:

Floriculture . . . . .	13,069 17
Forestry . . . . .	1,585 83
General Horticulture . . . . .	8,013 98
Grounds . . . . .	2,022 06
Horticultural Manufactures . . . . .	6,029 10
Landscape Gardening . . . . .	6,208 50
Market Garden Field Station . . . . .	3,862 22
Mount Toby Reservation . . . . .	744 36
Pomology . . . . .	6,519 95
Vegetable Garden . . . . .	3,679 05



P.D. 31.	43
Hospital	\$1,003 25
Humanities Division:	
Economics and Sociology	189 71
Language and Literature	689 90
Library	139,651 07
Military	1,624 43
Operating and Maintenance:	
College Supply	986 61
Fire Apparatus	1,655 75
General Maintenance:	
Office	785 55
Carpentry and Masonry Supplies	4,593 15
Carpentry and Masonry Tools	4,518 89
Electrical Supplies	3,015 81
Electrical Tools	231 29
Electrical Commencement Supplies	619 75
Heating and Plumbing Supplies	9,956 71
Heating and Plumbing Tools	488 90
Painting Supplies	1,475 63
Painting Tools	223 18
Steam Main	54,349 10
Lighting Lines	11,801 11
Janitor's Supplies	1,067 56
Sewer Line	15,974 52
Water Mains	14,181 74
Power Plant:	
General Equipment	102,603 63
Tools	2,616 53
Supplies	406 46
Fuel	5,784 76
Physical Education	1,763 96
Rural Social Science:	
Agricultural Economics	1,987 54
Agricultural Education	1,586 41
Rural Sociology	267 52
Short Course	2,228 94
Text Books	2,100 22
Social Union Room	780 00
Women's Dormitory	16,201 05
Memorial Hall	15,733 24
Totals	\$763,311 76

*Experiment Station Buildings (Estimated Value).*

	Inventory at Beginning of Year.	Per Cent.	Cost at Beginning of Year less Per Cent De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Year.
Agricultural laboratory . . . . .	\$14,322 17	2	\$14,035 73	\$84 19	\$14,119 92
Agricultural barn . . . . .	4,230 41	3	4,103 50	790 38	4,893 88
Agricultural farmhouse . . . . .	1,658 47	3	1,608 72	279 48	1,888 20
Agricultural glasshouse . . . . .	327 17	5	310 81	776 28	1,087 09
Brooks House . . . . .	2,930 99	5	2,784 44	111 31	2,895 75
Brooks barn and sheds . . . . .	1,425 00	5	1,353 75	—	1,353 75
Brooks tobacco barn . . . . .	—	—	—	—	3,000 00
Cranberry buildings . . . . .	2,779 87	5	2,640 88	—	2,640 88
Entomological glasshouses . . . . .	585 01	5	555 76	—	555 76
Plant and Animal Chemistry labor- atory . . . . .	27,196 64	2	26,652 71	196 04	26,848 75
Plant and Animal Chemistry Barns . . . . .	5,346 28	3	5,185 89	748 77	5,934 66
Plant and Animal Chemistry Dairy . . . . .	1,520 47	3	1,474 86	283 12	1,757 98
Six poultry houses . . . . .	702 81	2	688 75	—	688 75
Tillson house . . . . .	998 77	5	948 83	—	948 83
Tillson barn . . . . .	882 11	5	838 00	205 60	1,043 60
Tillson Poultry houses (4) Nos. 2-3- 4-5 . . . . .	2,954 04	2	2,894 96	—	2,894 96
Tillson Incubator cellar No. 1 . . . . .	720 59	2	706 18	—	706 18
Tillson Summer Sheds (3) No. 6 . . . . .	276 96	5	263 11	177 01	440 12
Tillson Pullet Brooder No. 7 . . . . .	1,091 26	5	1,036 70	85 22	1,121 92
Tillson Hen Brooder No. 8 . . . . .	1,174 46	5	1,115 74	52 73	1,168 47
Totals . . . . .	\$71,123 48	—	\$69,199 32	\$3,790 13	\$75,989 45

*Experiment Station Equipment.*

	Estimated Value.
Apiary . . . . .	\$144 71
Agricultural Economics Department . . . . .	379 83
Agronomy Department . . . . .	165 41
Botanical Laboratory . . . . .	8,313 41
Chemical Laboratory . . . . .	31,835 78
Cranberry Station . . . . .	6,636 82
Director's Office . . . . .	4,989 45
Entomological Laboratory . . . . .	24,603 46
Meteorological Laboratory . . . . .	741 00
Microbiological Laboratory . . . . .	3,609 70
Pomology . . . . .	5,382 18
Poultry Department . . . . .	5,977 93
Station Service . . . . .	9,423 05
Treasurer's Office . . . . .	982 53
Veterinary . . . . .	2,076 59
Totals . . . . .	\$105,261 85

*Summary.*

Land . . . . .	\$161,138 08
College buildings . . . . .	1,522,057 13
College equipment . . . . .	763,311 76
Experiment Station buildings . . . . .	75,989 45
Experiment Station equipment . . . . .	105,261 85
Total . . . . .	\$2,627,758 27
	Acres.
College estate (area) . . . . .	702.19
Cranberry Station, Wareham (area) . . . . .	23.67
Market Garden Field Station, Waltham (area) . . . . .	55.39
Mount Toby demonstration forest (area) . . . . .	755.27
Rifle range . . . . .	46.20
Pelham quarry . . . . .	.50
Total acreage . . . . .	1,583.22

## STUDENTS' TRUST FUND ACCOUNT.

	Disbursements, Year ending Nov. 29, 1924.	Receipts Year ending Nov. 29, 1924.	Balance on Hand.	Balance brought forward Dec. 1, 1923.
Athletics . . . . .	\$20,550 17	\$21,830 13	\$878 26	—\$401 70
Dining Hall . . . . .	103,546 32	96,752 87	—9,911 07	—3,117 62
Keys . . . . .	54 00	51 00	81 00	84 00
Student deposits . . . . .	47,764 71	49,133 82	13,887 36	12,518 25
Social Union . . . . .	2,164 92	2,421 67	340 32	83 57
Text Books . . . . .	9,554 33	10,669 81	2,438 02	1,322 54
Athletic Field . . . . .	—	—	169 70	169 70
Uniforms . . . . .	5,940 72	5,602 19	4,532 51	4,871 04
Cow-Testing . . . . .	16,572 15	16,427 03	2,069 52	2,214 64
Totals . . . . .	\$206,147 32	\$202,888 52	\$14,485 62	\$17,744 42
Balance beginning fiscal year . . . . .	—	17,744 42	—	—
Balance on hand November 29, 1924 . . . . .	14,485 62	—	—	—
Totals . . . . .	\$220,632 94	\$220,632 94	—	—

## CONDENSED OPERATING STATEMENT OF THE DINING HALL.

	Operating Charges.	Income.
1923.		
Dec. 1, Balance . . . . .	\$3,117 62	
1924.		
Nov. 29, Total Disbursements . . . . .	103,546 32	—
Outstanding bills . . . . .	838 56	—
Total collections . . . . .	—	\$96,752 87
Accounts outstanding . . . . .	—	1,669 60
Inventory . . . . .	—	9,580 29
Balance . . . . .	500 26	—
Totals . . . . .	\$108,002 76	\$108,002 76

ENDOWMENT FUND.<sup>1</sup>

	Principal.	Income.
United States grant (5 per cent) . . . . .	\$219,000 00	\$7,300 00
Commonwealth grant (3½ per cent) . . . . .	142,000 00	3,313 32
	—	\$10,613 32

## BURNHAM EMERGENCY FUND.

	Market Value Dec. 1, 1924.	Par Value.	Income.
Two bonds American Telephone and Telegraph Company 4s at \$97 . . . . .	\$1,940 00	\$2,000 00	\$80 00
Two bonds Power Corporation of N. Y. 6½s at \$100 . . . . .	2,000 00	2,000 00	130 00
One United States Liberty Bond 4½s \$101 . . . . .	505 00	500 00	21 25
One bond Ohio Service Company 6s \$103 . . . . .	515 00	500 00	30 00
	\$4,960 00	\$5,000 00	\$261 25
Disbursements for fiscal year ending November 29, 1924 . . . . .	—	—	31 94
	—	—	\$229 31
Unexpended balance December 1, 1923 . . . . .	—	—	93 09
Cash on hand November 29, 1924 . . . . .	—	—	\$322 40

<sup>1</sup> This fund is in the hands of the State Treasurer, and the Massachusetts Agricultural College receives two-thirds of the income from the same.

## LIBRARY FUND.

	Market Value Dec. 1, 1924.	Par Value.	Income.
Five bonds New York Central & Hudson River Railroad Com- pany 4s at \$94	\$4,700 00	\$5,000 00	\$200 00
Five bonds Lake Shore and Michigan Southern Railroad Com- pany 4s at \$98	4,900 00	5,000 00	200 00
Two shares New York Central & Hudson River Railroad Com- pany Stock at \$118	236 00	200 00	14 00
Amherst Savings Bank deposit	167 77	167 77	7 59
	<hr/> \$10,003 77	<hr/> \$10,367 77	<hr/> \$421 59
Sales of New York Central & Hudson River (stk) rights	-	-	5 38
	<hr/> -	<hr/> -	<hr/> \$426 97
Disbursements for fiscal year ending Nov. 29, 1924	-	-	426 97

## SPECIAL FUNDS.

*Endowed Labor Fund (the Gift of a Friend of the College).*

Two bonds American Telephone and Telegraph Company 4s at \$97	\$1,940 00	\$2,000 00	\$80 00
Two bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$98	1,960 00	2,000 00	80 00
One bond New York Central R. R. Gold debenture 4s	940 00	1,000 00	40 00
One bond Ohio Service Company 6s	1,030 00	1,000 00	60 00
Amherst Savings Bank, deposit	143 39	143 39	6 49
One bond Indiana Hydro Electric Co. 6s	990 00	1,000 00	-
	<hr/> \$7,003 39	<hr/> \$7,143 39	<hr/> \$266 49
Unexpended balance Dec. 1, 1923	-	-	664 63
United States Liberty Bond	-	-	42 50
Earnings from exchange of bonds	-	-	8 60
	<hr/> -	<hr/> -	<hr/> \$982 22
Cash on hand Nov. 29, 1924	-	-	

*Whiting Street Scholarship Fund.*

One bond New York Central & Hudson R. R. Gold debenture	\$940 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit	271 64	271 64	12 32
	<hr/> \$1,211 64	<hr/> \$1,271 64	<hr/> \$52 32
Unexpended balance Dec. 1, 1923	-	-	607 97
	<hr/> -	<hr/> -	<hr/> \$660 29
Cash on hand Nov. 29, 1924	-	-	

*Hills Fund.*

One United States Liberty Bond 4½	\$1,010 00	\$1,000 00	\$42 50
One bond American Telephone and Telegraph Company 4s	970 00	1,000 00	40 00
One bond New York Central & Hudson River Railroad debenture 4s	940 00	1,000 00	40 00
One bond New York Central Railroad debenture 4s	940 00	1,000 00	40 00
Three bonds Pacific Telephone & Telegraph Company 5s at \$99	2,970 00	3,000 00	150 00
One Penn Public Service Corporation 6s	1,010 00	1,000 00	60 00
Boston & Albany Railroad stock 3 5/8 shares at \$160	580 00	362 00	31 68
Amherst Savings Bank, deposit	72 75	72 75	3 28
Electric Securities Company bonds, 1 9/50 bonds at \$98	1,156 40	1,180 00	59 00
Two bonds Great Western Light & Power Co. 6s at \$101	2,020 00	2,000 00	120 00
One bond Potomac Edison Co. at 6½	1,020 00	1,000 00	-
	<hr/> \$12,689 15	<hr/> \$12,614 75	<hr/> \$586 46
Unexpended balance Dec. 1, 1923	-	-	2,339 48
One United States Liberty Bond	-	-	42 50
Earnings from exchange of bonds	-	-	8 44
	<hr/> -	<hr/> -	<hr/> \$2,976 88
Disbursements for fiscal year ending Nov. 29, 1924	-	-	358 00
	<hr/> -	<hr/> -	<hr/> \$2,618 88
Cash on hand Nov. 29, 1924	-	-	

*Mary Robinson Fund.*

Amherst Savings Bank deposit	\$142 00	\$142 00	\$6 45
Boston & Albany Railroad stock 3/8 share at \$160	60 00	38 00	3 32
Electric Securities Company bonds 41/50 bond at \$98	803 60	820 00	41 00
	<hr/> \$1,005 60	<hr/> \$1,000 00	<hr/> \$50 77
Unexpended balance Dec. 1, 1923	-	-	190 38
	<hr/> -	<hr/> -	<hr/> \$241 15
Cash on hand Nov. 29, 1924	-	-	



*Grinnell Prize Fund.*

	Market Value Dec. 1, 1924.	Par Value.	Income.
Ten shares New York Central & Hudson River Railroad stock, at \$118	\$1,180 00	\$1,000 00	\$70 00
Unexpended balance Dec. 1, 1923	—	—	255 74
Sales of New York Central & Hudson River rights	—	—	26 90
	<hr/> \$1,180 00	<hr/> \$1,000 00	<hr/> \$352 64
Disbursements for Prizes	—	—	50 00
Cash on hand Nov. 29, 1924	—	—	\$302 64

*Gassett Scholarship.*

One bond New York Central & Hudson River Railroad debenture 4s	\$940 00	\$1,000 00	\$40 00
Amherst Savings Bank deposit	11 64	11 64	48
	<hr/> \$951 64	<hr/> \$1,011 64	<hr/> \$40 48
Unexpended balance Dec. 1, 1923	—	—	466 26
Cash on hand Nov. 29, 1924	—	—	\$506 74

*Massachusetts Agricultural College (Investment).*

One share New York Central & Hudson River Railroad stock	\$118 00	\$100 00	\$7 00
Unexpended balance Dec. 1, 1923	—	—	116 45
Sales of New York Central & Hudson River rights	—	—	2 69
Cash on hand Nov. 29, 1924	<hr/> \$118 00	<hr/> —	<hr/> \$126 14

*Danforth Keyes Bangs Fund.*

Two bonds Pacific Telephone and Telegraph Company 5s at \$99	\$1,980 00	\$2,000 00	\$100 00
Two bonds Union Electric Light and Power Company 5s at \$98	1,960 00	2,000 00	100 00
Two bonds American Telephone and Telegraph Company 4s at \$97	1,940 00	2,000 00	80 00
One bond Oklahoma Gas & Electric Co. 6s	980 00	1,000 00	—
Interest from Student Loans	—	—	118 17
	<hr/> \$6,860 00	<hr/> \$7,000 00	<hr/> \$398 17
Unexpended balance Dec. 1, 1923	—	—	1,372 56
One United States Liberty Bond	—	—	42 50
Earnings from exchange of bonds	—	—	28 61
	<hr/> —	<hr/> —	<hr/> \$1,841 84
Total loans made to students during fiscal year \$2,492	—	—	—
Cash received on account of student loans \$2,869.50	—	—	—
Excess of cash received over loans made	—	—	377 50
Cash on hand Nov. 29, 1924	<hr/> —	<hr/> —	<hr/> \$2,219 34

*John C. Cutter Fund.*

One bond Pacific Telephone and Telegraph Company 5s	\$990 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1923	—	—	71 83
	<hr/> \$990 00	<hr/> \$1,000 00	<hr/> \$121 83
Disbursements for fiscal year ending Nov. 30, 1924	—	—	30 49
Cash on hand Nov. 29, 1924	—	—	\$91 34

*William R. Sessions Fund.*

One bond New York Central Railroad debenture 6s	\$565 00	\$500 00	\$30 00
Three United States Liberty Bonds, two at \$1,000 and one at \$500, 4½s at \$101	2,525 00	2,500 00	106 20
One bond Adirondack Light & Power Company 6s	1,010 00	1,000 00	60 00
One bond Southern Illinois Light & Power Company 6s	1,020 00	1,000 00	60 00
	<hr/> \$5,120 00	<hr/> \$5,000 00	<hr/> \$256 25
Unexpended balance Dec. 1, 1923	—	—	69 16
	<hr/> —	<hr/> —	<hr/> \$325 41
Disbursements for fiscal year ending Nov. 29, 1924	—	—	166 57
Cash on hand Nov. 29, 1924	—	—	\$158 84

*Alvord Dairy Scholarship Fund.*

	Market Value Dec. 1, 1924.	Par Value.	Income.
One United States Liberty Bond 4½	\$1,010 00	\$1,000 00	\$42 50
One bond Southern Illinois Light & Power Co. 7s	1,010 00	1,000 00	70 00
Two bonds Great Western Power Co. 6s at \$101	2,020 00	2,000 00	120 00
	<hr/>	<hr/>	<hr/>
Unexpended balance Dec. 1, 1923	\$4,040 00	\$4,000 00	\$232 50
	-	-	1,242 61
	<hr/>	<hr/>	<hr/>
Disbursements for fiscal year ending Nov. 29, 1924	-	-	\$1,475 11
	-	-	380 00
	<hr/>	<hr/>	<hr/>
Cash on hand Nov. 29, 1924	-	-	\$1,095 11

*J. D. W. French Fund.*

Two bonds Southern Illinois Light & Power Co. 6s at \$102	\$2,040 00	\$2,000 00	\$120 00
Two bonds Great Western Light & Power Co. 6s at \$101	2,020 00	2,000 00	120 00
Four bonds Penn Public Service Corporation, two 6½s at \$102, two 6s at \$101	4,060 00	4,000 00	250 00
Two bonds Ohio Service Company 6s at \$103	2,060 00	2,000 00	120 00
	<hr/>	<hr/>	<hr/>
Unexpended balance Dec. 1, 1923	\$10,180 00	\$10,000 00	\$610 00
	-	-	746 39
	<hr/>	<hr/>	<hr/>
Disbursements for fiscal year ending Nov. 29, 1924	-	-	\$1,356 39
	-	-	430 27
	<hr/>	<hr/>	<hr/>
Cash on hand Nov. 29, 1924	-	-	\$926 12

*Students' Loan Fund of the Massachusetts Agricultural Club.*

First National Bank	\$500 00	\$500 00	-
Total loans to students	-	400 00	-
	<hr/>	<hr/>	<hr/>
	-	-	\$100 00
Interest from student loans	-	-	3 86
	<hr/>	<hr/>	<hr/>
Cash on hand Nov. 29, 1924	-	-	\$103 86

*F. H. Crane Fund.*

Five bonds Ohio Service Company 6s at \$103	\$5,150 00	\$5,000 00	\$300 00
Two bonds Power Corporation of New York 6½s at \$100	2,000 00	2,000 00	130 00
Four bonds Potomac Edison Company 6½s at \$102	4,080 00	4,000 00	260 00
Four bonds Northern New York Utilities 6s at \$101	4,040 00	4,000 00	240 00
Five bonds Penn Public Service Corporation 6½s at \$102	5,100 00	5,000 00	162 50
Five bonds Illinois Power and Light Corporation 6s at \$101	5,050 00	5,000 00	150 00
Amherst Savings Bank	250 00	250 00	93
	<hr/>	<hr/>	<hr/>
	\$25,670 00	\$25,250 00	\$1,243 43
Interest on bonds	\$423 70	-	-
Scholarships to students	200 00	-	-
Printing	4 16	-	627 86
	<hr/>	<hr/>	<hr/>
Cash on hand Nov. 29, 1924	-	-	\$615 57

SUMMARY OF BALANCE ON HAND OF THE INCOME FROM FUNDS HELD IN TRUST  
BY THE M. A. C.

Burnham Emergency Fund	\$322 40
Endowed Labor Fund	982 22
Whiting Street Scholarship Fund	660 29
Hills Fund	2,618 88
Mary Robinson Fund	241 15
Grinnell Prize Fund	302 64
Gassett Scholarship	506 74
Massachusetts Agricultural College Investment	126 14
Danforth Keyes Bangs Fund	2,219 34
John C. Cutter Fund	91 34
Alvord Dairy Scholarship Fund	1,095 11
J. D. W. French Fund	926 12
Massachusetts Agricultural Club Fund	103 86
William R. Sessions Fund	158 84
F. H. Crane Fund	615 57
	<hr/>
	\$10,970 64

I hereby certify that I have this day examined the Massachusetts Agricultural College Account, as reported by the Treasurer, Fred C. Kenney, for the year ending November 29, 1924. All bonds and investments are as represented in the Treasurer's report. All disbursements are properly vouched for, and all cash balances are found to be correct.

CHARLES A. GLEASON,  
Auditor.

JANUARY 5, 1925.

#### HISTORY OF SPECIAL FUNDS.

*Burnham Emergency Fund.* — A bequest of \$5,000 from T. O. H. P. Burnham of Boston made without any conditions. The Trustees of the College have used this fund in any cases of emergency where funds were not available. At present the fund is intact and the income only has been used for such emergency matters as the Trustees have authorized. The fund now shows an investment of \$5,000.00.

*Library Fund.* — The library of the college at the present time contains 73,380 volumes. The income from the fund raised by the alumni and others is devoted to its increase, and additions are made from time to time as the needs of the different departments require. Dec. 27, 1883, William Knowlton gave \$2,000; Jan. 1, 1894, Charles L. Flint gave \$1,000; in 1887, Elizur Smith of Lee, Mass., gave \$1,315. These were the largest bequests and now amount to \$10,000.00.

*Endowed Labor Fund.* — Gift of a friend of the college in 1901, income of which is to be used for the assistance of needy and deserving students, \$5,000.00.

*Whiting Street Scholarship Fund.* — Gift of Whiting Street of Northampton, for no special purpose, but to be invested and the income used. This fund is now used exclusively for scholarship, \$1,000.00.

*Hills Fund.* — Gift of Leonard M. and Henry F. Hills of Amherst, Mass., in 1867, to establish and maintain a botanic garden, \$10,000.00.

*Mary Robinson Fund.* — Gift of Miss Mary Robinson of Medfield, in 1874, for scholarship, \$1,000.00.

*Grinnell Prize Fund.* — Gift of Hon. Wm. Claflin, to be known as the Grinnell agricultural prize, to be given to the two members of the graduating class who may pass the best oral and written examination in theory and practice of agriculture, given in honor of George B. Grinnell of New York, \$1,000.00.

*Gassett Scholarship Fund.* — Gift of Henry Gassett of Boston, the income to be used for scholarship, \$1,000.00.

*Massachusetts Agricultural College Investment Fund.* — Investment made by vote of trustees in 1893 to purchase one share of New York Central & Hudson River Railroad stock. The income from this fund has been allowed to accumulate, \$100.00.

*Danforth Keyes Bangs Fund.* — Gift of Louisa A. Baker of Amherst, Mass., April 14, 1909, the income thereof to be used annually in aiding poor, industrious, and deserving students to obtain an education in said college, \$6,000.00.

*John C. Cutter Fund.* — Gift of Dr. John C. Cutter of Worcester, Mass., an alumnus of the college, who died in August, 1909, to be invested by the trustees, and the income to be annually used for the purchase of books on hygiene, \$1,000.00.

*Alvord Dairy Scholarship Fund.* — Gift of Henry E. Alvord, who was the first instructor in military tactics, 1869-71, and a professor of agriculture, 1885-87, at this institution. The income of this fund is to be applied to the support of any worthy student of said college, graduate or postgraduate, who may be making a specialty of the study of dairy husbandry (broadly considered) with the intention of becoming an investigator, teacher or special practitioner in connection with the dairy industry, provided that no benefits arising from such fund shall at any time be applied to any person who then uses tobacco in any form, or fermented or spirituous beverages, or is known to have done so within one year next preceding, \$4,000.00.

*William R. Sessions Fund.* — In accordance with the request of my deceased wife, Clara Markham Sessions, made in her last will, I bequeath to the trustees of the Massachusetts Agricultural College, Amherst, Mass., the sum of \$5,000, it being the amount received by me from the estate of the said Clara Markham



Sessions. The said \$5,000 to be kept by the said trustees a perpetual fund, the income from which shall be for the use of the Massachusetts Agricultural College; and according to the further request of my deceased wife, made in her last will, this is to be known as the William R. Sessions fund, and is to be a memorial of William R. Sessions; and it is my special request that the said trustees shall make record of the fact that this fund came from the estate of my deceased wife Clara Markham Sessions, in accordance with her request made in her last will, \$5,000.00.

*J. D. W. French Fund.* — Gift of the Bay State Agricultural Society of Boston, Massachusetts. This fund to be known as the J. D. W. French Fund, and the Trustees of the Massachusetts Agricultural College are to use the income of this fund where it will do the greatest good, in the interest of Dairying and its allies, also in Forestry, as scholarships, loans, or prizes; especially, however, to help pay the expenses of the judging teams to the National Dairy Show and to the National Livestock Show, \$10,000.00.

*Frederick G. Crane Fund.* — Gift of Frederick G. Crane of Dalton, Massachusetts. The income of this fund is to be expended by the Trustees of the Massachusetts Agricultural College in aid of worthy undergraduate students of limited financial resources at the college, preference being given to residents of Berkshire County; such payments are to be known as the Frederick G. Crane Scholarships, \$25,000.00.

*Massachusetts Agricultural College Fund.* — The Massachusetts Agricultural Club gave \$500 to be used as a scholarship fund to the Massachusetts Agricultural College to help out deserving students there, who intended seriously to go into agriculture, interest on loans not to be charged until after graduation, \$500.00.

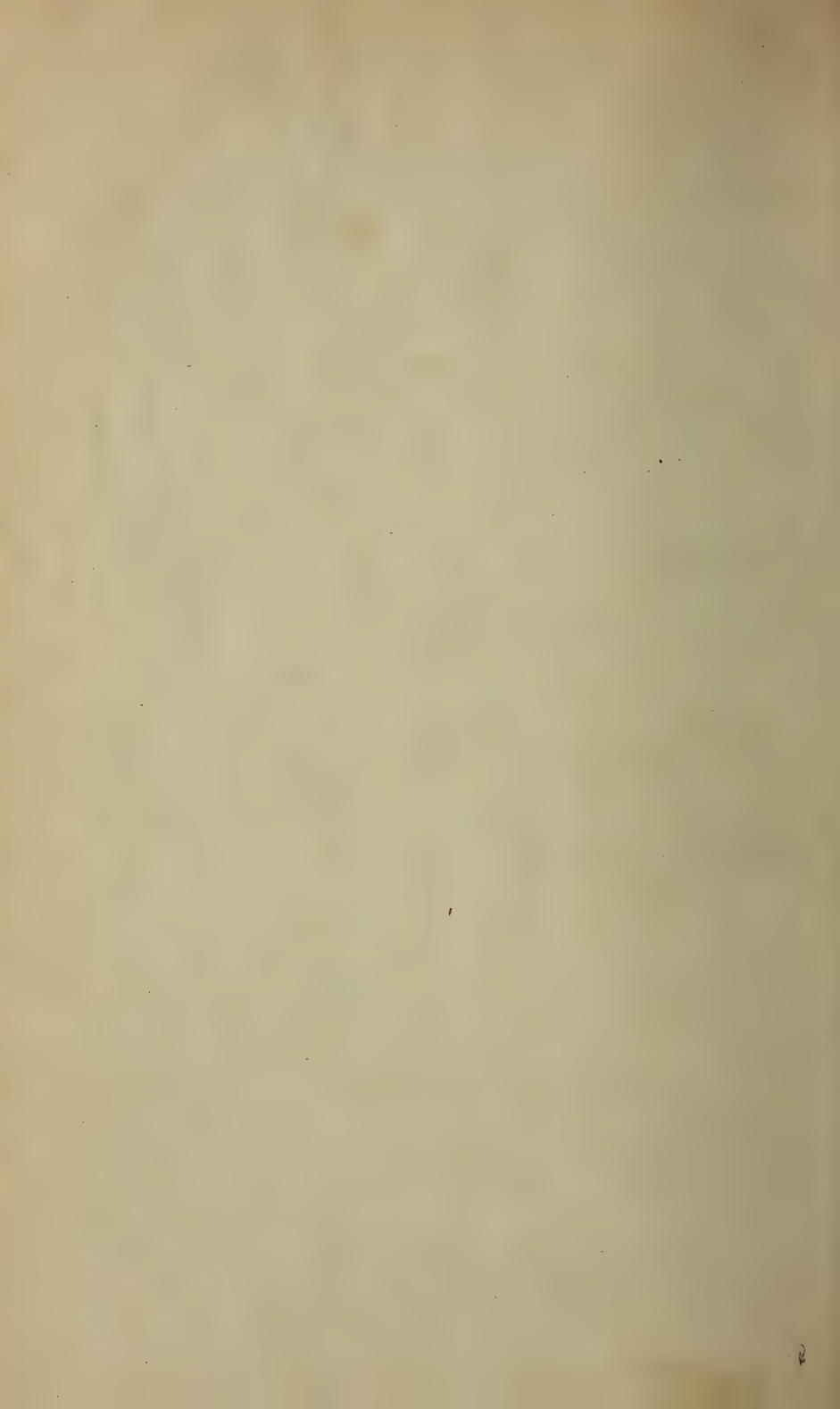
Total of special funds, \$85,600.00.

FRED C. KENNEY,  
*Treasurer.*

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UNIVERSITY OF ILLINOIS-URBANA



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